

# The MILLING WORLD

and CHRONICLE OF THE GRAIN and FLOUR TRADE.

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## FISKE'S BOLTING REGULATOR.

OUR illustrations represents sectional and perspective views of this device, which has achieved a considerable degree of popularity already, although never advertised. The object of the inventor has been to make a simple device to jar or rap the frame of a bolting reel in such a manner that the cloth would at all times sift the flour without liability of clogging. Figure 1 is a plan view; figure 2, a sectional view. A represents a bolting reel frame, and B the bolting cloth, made and applied in the usual manner. A short extension arm, C, is securely fastened to each arm of the bolt reel, as shown in figs. 1 and 2, and these arms project a little beyond, so that the wood bears against a spring D and receives a blow from a hammer Y at the end. The spring D may be of steel or wood, as desired, and has at the end an iron hammer. The spring handle is securely fastened at one end of the frame of the flour bolt, having one hammer and extending out so that the short extension arms C C will strike against the spring diagonally and press it back, and as they pass the hammer end a sudden blow is given these arms as the reel revolves, and this succession of blows jars the meshes of the bolt cloth so that they are kept clear of flour. The spring-hammer which is put on so as to strike endwise of the reel and always at the highest point is held at any desired position by means of the regulating screw E and yoke *b*, the spring passing through the yoke at *a*, the object being not only to set up the spring hammer to give a heavier blow, when desired, but to draw the hammer away from the extension arms of the reel when not in use.

Concerning this device the inventor says: It gives the blow on the upper side of the reel, and, for that reason, prevents making "specky" flour. It jars the rib endwise consequently the effect is uniform the whole length of the reel. As it does not come in contact with the cloth there is no danger of injuring it. It increases the bolting capacity of the reel from 25 to 50 per cent. It is under the perfect control of the miller, and can be adjusted to a light or a heavy blow, or the hammer can be withdrawn entirely. It is made in a very substantial manner and can not get out of order. It is usually put on at the tail of the reel, but it can be used at the head with equally good results. It can be put on by anyone whether a mechanic or not. Particulars as to cost, which is very low, may be obtained by addressing the manufacturer, J. E. Fiske, Jamestown, N. Y.

## THE NEW YORK PRODUCE EXCHANGE.

The long-talked-about and much-discussed new building of the New York Produce Exchange has at last been officially inaugurated, and the commerce of the Empire city has now a building in keeping with its importance and proportionate to the bulk of its transactions. It remains to the future generation of merchants to demonstrate to the industrial world at large whether they are willing and able to sustain that supremacy obtained by a judicious management of the commercial affairs of New York state during the past fifty years, beginning with the building of the Erie canal, that great and original enterprise towards a develop-

ment of the resources of Western America. With the growth of the commerce of New York state, the New York Produce Exchange has kept pace, and as one increased in importance, the other outgrew its humble origin in the daily gathering of a few merchants in the open air at the corner of Broad and South streets to compare business items.

As in this day, each merchant of that primitive assemblage pursued his ordinary business in buying and selling, but now and then opened an important sale or purchase for that time. This principle of no interruption of ordinary avocations, and the daily gathering at a certain hour for incidental comparison and exchange of information, has now become a fundamental principle in all the exchanges of the country. These merchants continued their daily meetings for many years, until the gradual increase of members and the advantages to be found in a formal organization led to the rental and then to the purchase of 16 South Street and the corner building adjoining where they had met, and to the formation of the old Corn Exchange.

The rapid development of the country and the immense amount of business to be transacted, soon demonstrated that the "Corn

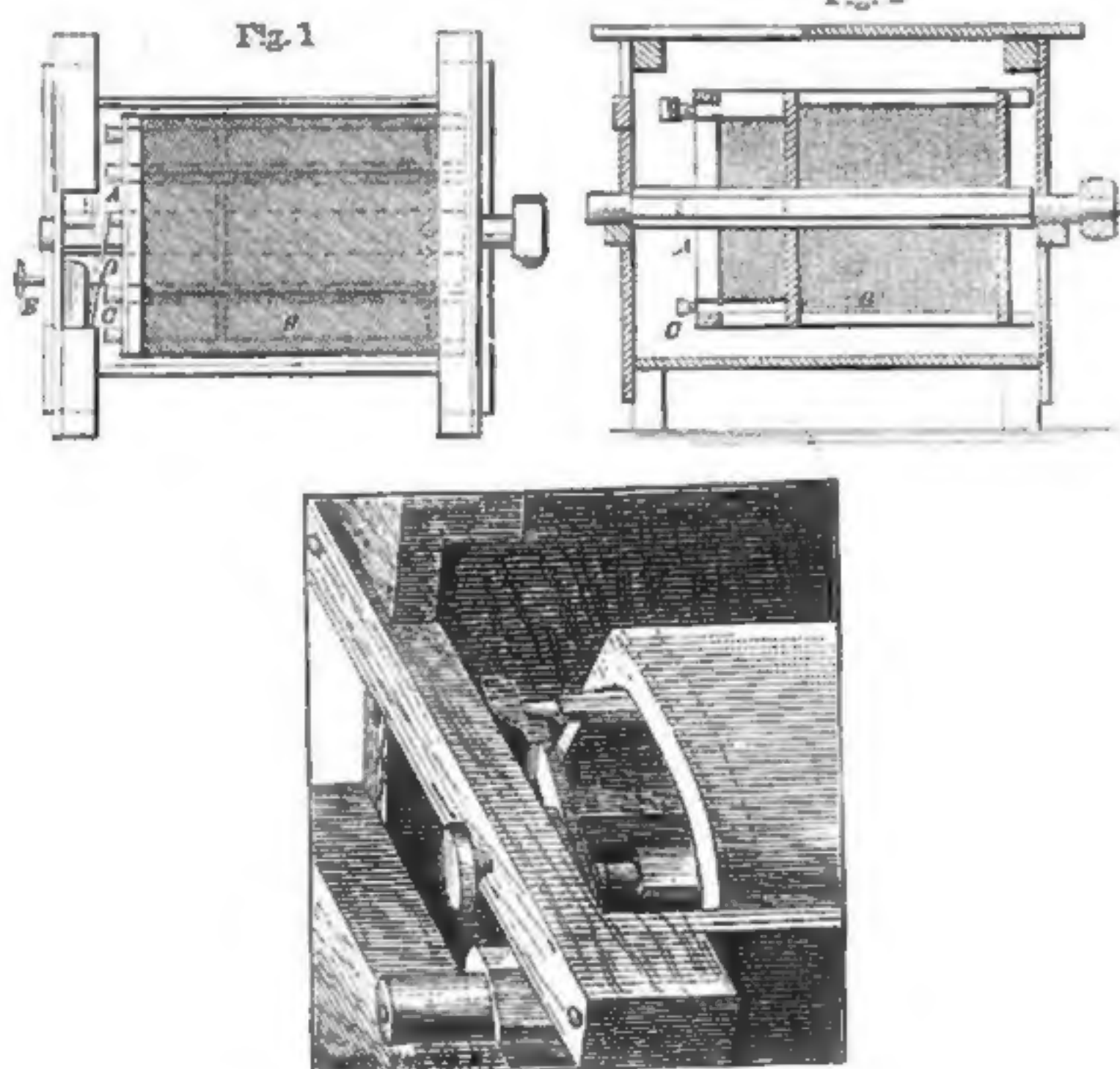
made added an entire story. It gave a reading room well lighted and warmed, and offices for the statistician and telegraph operators. In the fourth story, commodious Board and Committee rooms were provided. Still the edifice was not adequate to the vastly increasing volume of business for this commercial centre of America.

The membership list in 1880 numbered 2,468, and the rules adopted for the transaction of business facilitated the orderly and systematic work of the exchange.

The statistics of the acreage under tillage in the United States, as far back as 1862, and the aggregate of wheat, corn, oats, barley and other food products per annum as compared with the production of the same cereals and other articles of trade in 1880, covering a period of nearly twenty years; the receipts at New York city—the larger share of which is bought, sold and exported by members of the Exchange, give forcible evidence of the immense volume of business now transacted by the Institution. There was received at New York city in 1862 and 1880.

|              | Wheat, bush. | Flour, bush. |
|--------------|--------------|--------------|
| In 1862..... | 27,060,259   | 5,257,000    |
| In 1880..... | 59,492,246   | 5,422,252    |

There was also a corresponding increase in



FISKE'S BOLTING REGULATOR.

Exchange" was inadequate for the wants of New York City, and in 1860 an independent association of merchants formed the New York Produce Exchange Company, and erected the building hitherto occupied. The present company received its charter in 1862 as the New York Commercial Association, and since then it had power to regulate its own affairs, and to appoint an Arbitration Committee for the decision of controversies among members, and from that date the New York Produce Exchange entered upon an era of prosperity.

At the close of the first fiscal year the members numbered 1,238, and the income of that year was nearly \$25,000. The dues were then increased and with the increase of members in 1869 amounted to \$49,000. In February, 1868, the name of the New York Commercial Association was changed by Legislative Act to that of New York Produce Exchange. In 1872, after paying eleven years rental, the edifice was purchased from the New York Produce Exchange Company for \$265,000, and became the property of the Produce Exchange. The alterations

the receipts of other cereals, and in provisions in the same period,

Estimated acres in wheat in the United States in 1880, 37,037,950, yielding a total of 480,849,722 bushels, valued at \$453,558,371. The corn crop covered 52,695,031 acres, giving a yield of 1,537,535,900 bushels, valued at \$617,485,125. These are the estimates of the Agricultural Department at Washington.

The tillage in wheat in 1863, twenty years ago, was 13,098,936 acres, yielding 173,877,928 bushels. In this period has been cleared and developed much of the great wheat belt of the west. The tides of emigration are just beginning to enter upon the vast fields of yet untitled land in that fertile domain. A few years ago Dakota was almost uninhabited. In the present year its wheat crop is estimated at thirteen million bushels, and its wheat lands at thirty to forty millions of acres.

In 1860 the butter production of the United States was placed at four hundred and sixty million pounds. In 1864, the New York Exchange Committee on dairy pro-

ducts put the amount at one thousand million pounds. In the same ratio, the yield for 1880 would be two thousand three hundred and forty million pounds.

The petroleum oil fields of western Pennsylvania when first discovered, about 1859, produced in that year 82,000 barrels. In two years afterward they yielded two million one hundred and thirteen thousand. In 1879, the product was 19,741,661 barrels. The export alone 12,432,572 barrels. At present America holds the market of the world in this staple.

This statement of the growth in staple products, of which the Exchange now receives and disburses so large a share, is evidence of its rapid corresponding growth and of its potency, as the chief factor in this disbursement throughout the United States. If true to itself, in all honorable and fair dealing it is yet destined to be the great factor in the produce trade of European countries.

Only half a century ago the great West and Northwest formed the hunting grounds of Indians; now they abound with almost endless cereal fields. None of our so-called modern conveniences of commerce were known, neither railway nor steamer, nor telegraph existed, and water transportation was the best known means for the growth of commerce. Really the improvements made in every method of communication during the past fifty years as witnessed by the New York Produce Exchange, must inspire every one of its members with an unlimited confidence in the resources of the United States.

Every member of the Exchange is entitled to a membership certificate. The prices of such certificates increase with the addition of larger numbers; so, for instance, the present fee is \$2,500, but whenever the membership exceeds 3,000, the fee will be raised to \$5,000. When the old Exchange was found too small to accommodate the growing commerce of the city, a building committee, composed of the most experienced members, was authorized to take the steps necessary for the transference of the Exchange to more spacious and better appointed quarters. The labors of this committee cannot be valued too highly. In view of the large area of ground to be covered by the proposed colossal structure, the necessity for a central locality, it is safe to state that the greatest care and the best judgment was needed to secure the most eligible site, enduring material and economy in its structure and finance. This work was complicated. To secure the present site not less than twenty-four titles from forty different persons and estates had to be obtained, and a street had to be extended in its rear. It is situated upon slightly rising ground made of quicksand, at the foot of Broadway, opposite Bowling Green. This little park, with its fine trees, flowers and fountain, and an open view of the water across Battery Park, forms a picture of ever-increasing beauty before the doorway and in the window view of the magnificent Temple of Trade. The soil is solidly piled, and gives a firm foundation, and there is no noxious and dangerous gases arising from artificial ground, but the whole will be pervaded by a pure and healthy atmosphere.

Seventeen architects competed for the building. From among their plans four



were selected, the names of the designers hidden under mottoes, and in presence of the whole exchange one of these four was selected by ballot. And in this manner Mr. Geo. B. Post became the architect of the building, which is in style a modified renaissance—not a French, German or Italian renaissance, but more French than Italian and enough of the distinctive elements of this order to give it this name.

The question will arise to persons not versed in the forms of the art, what is renaissance. It is a French word meaning re-birth, reproduction, or revival. Hence, when in the beginning of the 14th century, this order had its birth in Italy, it was termed "the revival of art." Prior to this the chief orders were the ancient classic and the Gothic. The latter had long been the leading order to churches and monuments. Near the close of the 13th century the citizens of Florence desired to erect a monument which should surpass all others. In this originated the famed Duomo, or Santa Maria del Fiore of Florence, the foundation of which was begun in 1298. It was a church of vast dimensions, and the plan original in style—a mean between the classic and the pointed. Its completion was entrusted to the great architect and sculptor, Brunelleschi, on his return from Rome, and the study of its ancient ruins, in 1407. By his genius, and in this remarkable edifice the renaissance had birth. It was surpassed by no other except St. Peter's at Rome. In the classic examples of Rome he traced out the orders of architecture; in them he learned the perfect accordance between what is useful and what is beautiful; the principles of that nice equilibrium, equally requisite for the beauty and solidity of an edifice. In the great Duomo he was entombed after nearly forty years study and labor in its completion, and this edifice gave the hint for the grandest monuments of modern architecture. In this modified renaissance Mr. Post has sought to unite in the new Exchange, economy of space, solidity and beauty.

The New York Produce Exchange is situated in a lot bounded by Broadway and its continuation Whitehall street, Beaver street, Stone street, and a continuation of New street, which has been made to intersect with Marketfield street. The portion of Marketfield street between this intersection and Broadway, having been closed by act of Legislature, is covered by the building.

The dimensions of the building on the ground are: on Broadway and Whitehall street, 307½ feet, Beaver street, 150¼ feet, Stone street, 149 feet, with a clock tower at the easterly end of the Stone street facade, covering at its foot a space of 40x70 feet. The average height of the facades of the building is 125 feet above the curb. The height of the clock tower, which assumes the general form of an Italian campanile is 200 feet. The material used for the facades is granite for the cellar walls and base course and porches, and for the terrace north of the tower, which extends to the line of Marketfield street; above the base course, except the porches, the entire design is executed in red terra cotta and red Philadelphia brick. The great magnitude of this building may be appreciated by the statement that the girth of the outside of the walls is but little less than a fifth of a mile, and the aggregate floor surface of the building is 7½ acres, and 2,521 square feet, and that the aggregate weight on the foundations is about 50,000 tons, which weight is borne by about 16,000 piles and massive stone squares.

In the selection of the materials, and in the general design of construction, special reference was had to durability, fire proof qualities, and an abundance of natural light. That these objects have been successfully accomplished, needs but a visit of inspection

to confirm. Solidity and architectural uniformity have not alone been attempted, but wherever possible, ornamentation has been added, giving a fine effect to the whole.

The Exchange room proper is 220 feet long, by 140 feet wide by 60 feet high in the centre lighted by 22 windows, each 31 feet high, and by a skylight over its centre 44 feet wide by 180 feet long, and 56 feet wide. The north end of the Exchange floor is divided into two stories, giving accommodation for the executive offices of the Exchange, rooms for the library, coat rooms and other apartments for the accommodation of members. The large room of the Exchange is admirably adapted for the daily transactions of the business of the members, care being taken that nothing should be omitted in this respect, to lessen the facilities for conducting the immense volume of trade here carried on.

The entrance to the building is by means of three main porches on Broadway, Beaver and Stone streets. The entrance most largely used by members of the Exchange will probably be through New street and Marketfield street and the terrace to the easterly door of the building. Access to Exchange Room and upper stories is gained by one grand staircase and five Otis elevators at the northerly end of the building, and a second grand staircase and four elevators in the tower at the southeast corner. One of these elevators will run to the roof of the tower.

In the basement of the Exchange are the Safe Deposit vaults, organized under the auspices of leading members of the association, and which is likely to prove a great convenience to its own membership and others seeking a secure deposit for valuables of every character. On the ground floor large rooms are occupied principally by members of the Produce Exchange; connected with each part of the building are speaking tubes and the multiphone systems; five elevators will be in constant motion, while every precaution has been made to secure perfect sanitary conditions, ventilation and heating arrangements.

The flag pole on the tower is 115 feet long and 90 feet clear of the cupole. The flag itself is a marvel of richness and beauty, 100 by 50 inches in size, and with one exception the largest American flag in the land. The clock is conspicuous and can be seen at quite a distance, very plainly from the Brooklyn Bridge.

The building now completed under such happy auspices and with the promises of a glorious future was commenced May, 1881, and the corner stone laid with imposing ceremonies June 6, 1882. The total cost of the structure as it now is, amounts to about \$3,000,000, \$1,000,000 of which sum includes the cost for this site and the pile foundations. The present membership of the Exchange is three thousand and a seat is valued at \$4,100. In the list of members are many of the largest operators and most successful business men in the city, who with the authorized officials, give tone and character to this mercantile corporation, the most powerful organization of its kind in this or any commercial nation.

Under the broad dome of this mammoth structure will be gathered the products of every portion of the United States, and the vast territory thus included, the soil and climate so varied, yielding all kinds of food for man and beast, will here find a grand centre from whence these products will be distributed, not only in our land, but to every part of the habitable world. In this one building, with the aid of the cable, the telegraph and the telephone, the principal commercial emporiums of two continents are brought into instantaneous commercial intercourse. And as a man speaks with his friend, so while comfortably located in this place, close and intimate business relations

can be opened and sustained with persons thousands of miles distant.

The New York Produce Exchange Reporter, to whom we are indebted for most of the foregoing sketch, contains a large cut of the new building, and together with a full programme of the ceremonies attending the vacation of the old, and the opening of the new Exchange, publishes a large number of notes, historical and commercial, from among which we select the following:

In 1850 our exports of flour were mainly composed of New York State extras, manufactured, to a great extent, from western and Canadian wheat at Black Rock, Oswego and in the Genesee district, Rochester, etc. Now the exports are chiefly made up from the product of mills located west of the Alleghenies, a very considerable part of it coming from as far west as Missouri, Minnesota and Wisconsin. There is not enough flour now manufactured in the Middle and Eastern states to supply the needs of their people. And we can remember when consignments of flour from the far western states were looked upon as not desirable to make advances on, and as rather risky business.

Taking the country at large, a little calculation shows how greatly our milling industry must have been developed during the past thirty years or more. The increase in population from 1850 to 1880 was about 27,090,000, and placing the per capita consumption at 4½ bushels of wheat or one barrel of flour per annum, this increase of population with our larger exports shows that our milling capacity must have been enlarged during those thirty years by some 34,500,090 barrels, and that with a population of 56,000,000 it must now reach fully 65,000,000 barrels per annum, against, say 25,000,000 in 1830.

It seems a little inconsistent, especially when viewed in the light of true progress, that of all the food products derived from our soil, wheat is the only article that is cheaper now than thirty years ago, while all other kinds of food produced by us are dearer, and the most of them very materially so. If a comparative statement of prices, now and thirty years ago, were to be published and sent to every farmer in the land, it would be doing them and the country a great service.

#### DETERMINATION OF MOISTURE IN STARCHY MATERIAL.

The determination of moisture in starch has repeatedly been the cause of disagreeable discussions, due to different results obtained by different methods, says the *Oester.-Ungar. Mueller Zeitung*. If moist starch is suddenly subjected to a temperature of 60 deg. C., a crust forms on the outside which prevents the evaporation of any internal moisture. Besides this, there are other causes that interfere with the result, such as the use of acids, which some manufacturers employ to obtain an extra white product; this always produces variations in the result, for even a very small quantity of acid is capable of forming a considerable amount of glucose during a slow and prolonged desiccation. As little as one two-thousandth part of acid in a mixture of starch with twenty per cent. of water, can transform the starch into sugar in four or five hours. The following method has invariably given good results in such determinations: First find out whether the starch contains any acid. If not, then weigh five or ten grammes in a glass or porcelain capsule, and put it into a cold evaporator, the temperature of which is made to rise very slowly in the course of three hours up to 60 degs. C., and after that in one hour to 100 degs; this latter temperature is kept up until two samples weighed at different times, show no difference in weight. In that case the desiccation is complete, and the starch has not changed.

If the starch was acid, it takes on a yellowish color, indicating its partial destruction and transformation into dextrin. If the starch is strongly acid, it has to be neutralized by adding an equal quantity of water to the sample, and one or two drops of ammonia. The mixture is then stirred and placed into the evaporator, the temperature of which is not allowed to rise above 40 degs., until the sample is almost dry. This has the effect of neutralizing the acid, and the determination of moisture can be proceeded with as above.

#### AMERICAN AND AUSTRIAN MILLERS.

Under the title of "Self-Protection for Millers," Mr. J. Rollett publishes a series of articles in the *Oester.-Ungar. Mueller Zeitung*, from which we translate the following: We have a goodly portion to learn from the Americans, and this applies not only to the Austrian, but also to the Hungarian millers. The place occupied by Budapest as a milling center for Europe, is taken by Minneapolis in the United States, and although the latter is the younger of the two, it has already surpassed its older companion, for while the mills of Budapest ground 356,000,000 kg. grain in 1882, the milling association of Minneapolis used 800,000,000 kg. in 1882-83.

I call special attention to the term "milling association." The 25 mills of Minneapolis, have, in spite of the good location, soon discovered their vulnerable point and tried to protect it. With us in Austria-Hungary the millers are well aware of their dangers, but no one tries to do anything to guard against them. The millers of Minneapolis as soon as they discovered that grain prices rose by competition, formed an association for the purpose of purchasing the supply for all the mills together. In such a manner they had bought in 1882 in November, right after the harvest, 1,600,000q wheat, and increased their stock by February, 1883, to 9,000,000q wheat; a quantity larger than the expected demand.

Compare such action with our home mills. Take the four largest mills of Vienna who use annually at least 1,000,000 meter centner of grain; they all labor under difficulties essentially alike, but none ever thinks of forming a combination for mutual interest in the purchase of the grain. One million meter centner bought by one agent could be had at a cheaper figure than the same quantity bought by different men in a number of smaller lots. In addition to that, transportation charges could be obtained at reduced rates on such large quantities of grain, and the cost of the raw material would be considerably lessened. Such an action would not only prove beneficial to the larger milling centers, but even smaller mills of one district or along one and the same watercourse could well take an example of the Minnesota Milling Association and purchase their grain together in bulk in preference to competing with each other on the markets.

#### CHEAP FOOD.

The winter has been severe on the farm animals of the country; but, with that exception, the cold season has been a positive benefit to the farming districts, and the outlook is good, says the *Boston Daily Advertiser*. The area covered with winter wheat is about 27,600,000 acres. This is an increase of about five per cent. over the area actually harvested last year. The improvement is due in good part to the South, and mainly to the Pacific coast, where the increase is 1,500,000 acres. All accounts agree in the statement that the Pacific coast bids fair to have the largest harvest of winter wheat in its history. The reports from the Southern states are also favorable, and from the Middle states fair. Compared with



last year, the outlook is excellent. In Europe the outlook is said to be brilliant. Great Britain and Germany have had the mildest winters for many years past, France has suffered from but one unseasonable frost, and Russia is, as usual, a land of riddles and uncertainties. But the prospect is that winter wheat will be abundant everywhere, and that bread will not be dear.

Of course, early in May no one can say what the harvest of the world will be. We know, however, that the critical season has been passed under more excellent conditions than is usually the case, and that the operations of spring proceed in a remarkably encouraging manner. There is room for the hope, then, that meat and bread will be abundant everywhere, and that consumers will not suffer on that point. Europe in particular feels highly encouraged, because a good harvest means good business generally. What the harvests are to this country appears from the following table, which is official, and names the value of our exports:

| Periods.    | Cotton.         | Breadstuffs.    | Animal Products. |
|-------------|-----------------|-----------------|------------------|
| 1866-69.... | \$798,809,481   | \$205,225,440   | \$115,820,432    |
| 1870-76.... | 1,447,908,884   | 738,800,228     | 514,065,620      |
| 1877-83.... | 1,419,827,358   | 1,459,020,577   | 977,496,416      |
| Total....   | \$3,665,545,558 | \$2,403,046,254 | \$1,607,372,468  |

#### MILL DAMS.

A novel question has lately been decided by the Circuit Court of the United States for the district of Connecticut, which by its very novelty is of interest to the milling fraternity as heavy consumers of water power, and which we take from an account given by the New York *Sun*, in the case of the Holyoke Water Power Company against the Connecticut River Company.

The defendants maintain a dam at Enfield, in Connecticut. The Legislature of that State in 1881, authorized them to increase the height of this dam. Sixteen miles further up the Connecticut river, but in the state of Massachusetts, the plaintiffs maintain another dam, which furnishes water power to operate the extensive manufacturing establishments at that place. Being apprehensive that their property would be greatly injured by the elevation of the dam at Enfield, the Holyoke Water Power Company brought suit in the United States Circuit Court, at Hartford, before Judge Nathaniel Shipman, to enjoin the Connecticut River Company from going on with the contemplated work. The defendants in answer pleaded the authority given them by Connecticut Legislature, as a sufficient warrant of law for raising the Enfield dam.

As to the extent of the damage which would be done by the proposed elevation, the testimony was conflicting, but Judge Shipman came to the conclusion that it would result in some pecuniary injury to the Massachusetts corporation for six or seven months in the year, by diminishing the fall of water at the upper dam. This injury, while not amounting to the taking of land, would affect the use of the property.

The express purpose of the Connecticut Legislature in authorizing an increase in the height of the Enfield dam was to improve the navigation of the Connecticut River, and it may be considered as settled, says Judge Shipman, that "where a State by itself or its agents, in the construction of works authorized or directed by the Legislature of such State, for the benefit of the navigation of a navigable river within its borders, causes, without malice, in the exercise of ordinary care, a necessary consequential injury to land within its borders, no relief will be granted against such injury." This conclusion is substantiated by the weight of authority in the State and Federal courts. But the peculiar question in the case under consideration arose from the fact that the injury caused by the work in Connecticut would be inflicted upon property situated

without the borders of that State and in another territorial jurisdiction. Can one State, by virtue of the power of eminent domain, take land in other State or subject it to a public use.

This question Judge Shipman answers in the negative, saying: "The owner of land abutting upon a navigable river owns it subject to the right of the State to improve the navigation of the river, because the land is within the governmental control of the State; but it seems to me that the State obtains by virtue of its governmental powers no control over or right to injure land without its jurisdiction. Jurisdiction comprises the power and the right to inflict consequential injury, but when no jurisdiction exists the right ceases to exist. It is a recognized principle that the statutes of one State in regard to real estate cannot act extra territorially. As Connecticut has no direct jurisdiction or control over real estate situated in another State, it cannot indirectly, by virtue of its attempted improvement of its own navigable waters, control or subject to injury foreign real estate."

An injunction was ordered to issue. The importance of the decision to different states through which the same navigable rivers flow is obvious. The precise question does not appear ever to have been decided before, but we cannot doubt that the conclusion reached by Judge Shipman is correct.

#### CLIMATIC INFLUENCE OF FORESTS.

Forests bear a close relationship to climate and atmosphere, are closely connected with our health and comfort, and have important relations to the larger interests of agriculture, commerce and manufacture, says the Commissioner of Agriculture in his annual report. The forests are great reservoirs and distributors of moisture. The atmosphere within the forests is always more moist than that of the open country, and tends to impart, by the immense exhalation from its leaf surface to the adjacent regions, the beneficial influence of that moisture, promoting a richer growth of grasses or grains.

Whatever may be admitted or denied as to the increase of the rainfall, as occasioned by the presence of forests, no one of any observation, or who candidly considers the subject even for a moment, can deny that the forests have a direct influence, and a most important one, on the distribution of rainfall. The accumulated leafage of the trees falling from year to year, produces a soil of spongy texture. The rain, be it more or less, which falls upon this soil, does not at once flow down the hill sides as from a house roof, or as it would from hills bare of trees, but is held in suspense so that it trickles away gradually into the brooks and rivulets, and thence into the larger streams, or sinks into the deeper soil to re-appear in springs in the distant meadows and pastures. The result is that the streams flow with a nearly equal supply of water from season to season. When, on the contrary, the forests are removed from the hills, the spongy surface soil itself is soon dried up by exposure to the sun and winds, and is washed away, and then the falling rains or melting snow, no longer having anything to detain them, rush down the slopes at once, filling the beds of the streams to overflow, often doing great damage.

So again, in the season of the year when the rainfall is comparatively scanty, there being no reservoir of stored up water on the spongy slopes of the hills and mountains to make up for the deficiencies and send their steady streams into the water courses, the volume of the rivers is diminished and the supply of water is inadequate to the demand. The mill wheels can be no longer driven, the machinery in a thousand factories, and tens of thousands dependent upon them

for bread, stand idle or can use only half their capacity of labor, and the owners cannot secure the proper return for their large and costly investments.

So also, the boats of commerce are impeded in their course. Goods cannot reach their destined markets at the expected time. Contracts are unfilled. Obligations are not met. The whole course of business is deranged, and vexation and loss are occasioned. The husbandman also feels the effect in his stagnant or withered crops. The springs fail him in the pastures, and the cattle fail him in field and stall. And all this derangement of life and disappointment of toil and expectation, because the trees have not been left on the hill sides to hold out their leafy hands to catch the rain drops for man, storing them at their feet and dispensing them seasonably as his needs demand.

While forests have this intimate connection with the moisture of the atmosphere and the distribution of the rainfall, and so an important connection with the great interest of agriculture, commerce and manufacture, by their very mechanical presence and physical bulk they serve as barriers against sweeping winds, which, by their mechanical violence, would prostrate the crops, or by their chill or heated temperature would wither or destroy them. From the most careful estimates, based upon prolonged and scientific examination, the conclusion has been reached that for the best interest of any country, unless under exceptional circumstances, from one-fourth to one-third of its surface should be preserved in a wooded or forest condition.

In whatever aspect we contemplate the forests, they present themselves as objects of the first importance. No object has a stronger claim upon our attention and care than this; none is more vital to the national welfare. Our forest interest is not only the largest, considered from a pecuniary point of view, \$700,000,000 annually, but many other great interests are dependent upon it. We cannot, therefore, cherish our woodlands with too much care. We cannot take too much pains for their preservation.



#### BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,  
Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

#### BUCKWHEAT FLOUR

Always commands a better price, and gives better satisfaction to the consumer when made by the aid of Crausons' Silver Creek Roller Buckwheat Shucker. This is a fact which we can demonstrate to any miller who will write us.

G. S. CRANSON & SON,  
Silver Creek, N. Y.

#### SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1½ cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

#### WANTED.

A situation by a good miller, to take charge of a 100 to 200 bbl. roller mill. Address, MILLER, 104 East Center Street, Akron, Ohio. 34

#### SITUATION WANTED.

To take charge of roller mill of 125 to 500 bbls. capacity, by thorough practical miller, now second in charge of a 1,000 bbl. mill. Will give trial gratis. Address, No. 20, MILLING WORLD, Buffalo. 34

#### SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1½ cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 50 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

#### FEED MILL FOR SALE.

A portable iron disk feed mill for sale. Well built, large capacity, and in perfect order; unpacked, as delivered from factory. Price, \$10. Address, O. F. F., drawer 203, Buffalo, N. Y.

#### FOR SALE.

Grist mill, located at Arcade Center, N. Y. Has two small run of stone, water power, frame building. The premises, besides the mill includes two acres of land, frame dwelling house, barn, shed, etc., all in good repair and mill in complete running order. Address WM. BOLENDER, Arcade, Wyoming county, N. Y. 14

#### WE WANT A GOOD TRAVELING AGENT.

And will make very liberal arrangements with him to represent our interests. Must be thoroughly posted in the mill-furnishing trade, and competent to make estimates for building new or remodeling old mills. All communications will be regarded as confidential. Address in first instance D. B. R. M., care THE MILLING WORLD, Buffalo, N. Y. 14

#### FOR SALE CHEAP.

One 6-horse power engine and 10-horse power boiler, all complete, price, \$350; one 8-horse power engine and 10-horse power boiler, price, \$375; one 10-horse power portable complete, price, \$350; one 10-horse power Russell Traction, price, \$500; one 4-horse power vertical engine, price, \$180. Call or address for particulars EZRA F. LANDIS, Lancaster, Pa. 232

#### NOTICE TO MILLERS, ETC.

Blue Springs, Nebraska, has the best water power of any town in the state. Those who contemplate building a flouring mill, factory, or other establishment run by water power will find it to their advantage to correspond with Sec. Board of Trade, Blue Springs, Nebraska. 205

#### WATER POWER CUSTOM MILL FOR SALE.

Four run burrs; low dam; 20 feet head; good location, near Troy, N. Y., doing paying business which can be readily enlarged. An old established and very desirable property, on easy terms; possession any time. No postals, but to any one meaning business call upon or address J. EVANS, Schaghticoke, N. Y. 36

#### FOR SALE CHEAP.

Two 27-inch Burnham wheels, one 30-inch Burnham wheel, one 35-inch Leffel wheel. The Burnham wheels have been used but one year, and are good as new, also complete set Stevens rolls. These rolls were used but a few months, but passed through a fire. They do not seem in the least affected thereby. It will pay you to call and examine the above, L. C. TORRANCE, Gowanda, N. Y. 3

#### MILL FOR SALE CHEAP.

Situated in the town of East Bloomfield, Ontario Co., N. Y. Mill has 3 run stone and all machinery for doing first class custom and merchant work. There is eight acres of land. Good house, barn and plenty of fruit, the mill is driven by spring stream that never fails. Situated ¾ mile from depot. Reasons for selling ill health. Those wishing to buy mill property would do well to see this. BURRELL BROS., East Bloomfield, N. Y. 20

#### FOR SALE.

Water Mill in Kansas. About 100 bbls. capacity. Ten feet head of water. Good stone flume and desirable merchant trade established. Averages 180 bushels daily in exchange. Located at a railroad town and county seat, in the best winter wheat belt. Will be sold at an early day to the right man. Mill now running day and night. Good reasons for selling. Address, with stamp enclosed for particulars, Lock Box 48, Vandalia, Ill. 61

#### YOU CAN BUY THESE CHEAP.

1400 4x3 elevator cups.  
1300 4¼x3¾, made by W. P. Myer, of Indianapolis, Ind.  
One No. 8 Excelsior Centrifugal reel.  
One " 1 J. T. Walter Middlings Purifier.  
One " 2  
Four McCully Corn Cob Crushers.  
Each of the above articles is brand new, in perfect condition, just as they left the factories, never having been unboxed, and will be sold very cheap for cash, the owner having changed his plans, has no use for them. Address S., 30 care THE MILLING WORLD, Buffalo, N. Y. 11

#### MILL FOR SALE.

I wish to sell my mill property, known as the York Mills, in Saline, Washtenaw county, Mich. In the heart of the best wheat growing County in the State. Mill new two years ago. Has four run of Obenchains automatic grinding mills, a three reel bolting chest, smutter, purifier and corn sheller all complete. A Little Giant water wheel sufficient to do the whole work. Good water power. About six acres of excellent land; two good houses; horse barn and cooper shop. Fruits of all kinds. Very pleasantly situated. Has a good custom trade. Three thousand five hundred dollars can remain on the property for a term of years. Reason for selling, old age and poor health. Address J. G. HOYT, Box No. 172, Saline, Washtenaw county, Mich. 25

#### SOME BARGAINS.

We have on hand the following machinery, which we have replaced at Hardesty Bros. mill, at Canal Dover, which we will sell very cheap:

Two No. 3 Hunter Purifiers, in good order.  
One No. 6 Smith Purifier, good as new.  
Two No. 3 Silver Creek Bran Dusters.  
Two Double Set of 9x18 Stout, Mills & Temple Rolls one set corrugated, 20 cuts; other set 24 corrugations. Rolls were replaced by larger ones.  
Four Gratiot Wheat Heaters, good as new.  
Also a lot of Bolting Cloth, Pulleys, shafting, and other articles too numerous to mention. Address, THE MILLER CO., Canton, Ohio.





PUBLISHED

EVERY THURSDAY MORNING.

C. A. Wenborne, Proprietor.

Office, Lewis Block, cor. Washington and Swan Streets.  
BUFFALO, N. Y.MR. THOMAS McFAUL is the authorized agent and  
traveling correspondent for this paper.

## SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; can be remitted by Postal order, registered letter, or New York Exchange. If currency is enclosed in unregistered letter, it must be at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

## ADVERTISING.

Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

## EDITOR'S ANNOUNCEMENT.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

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EXPERIMENTAL laboratories, experimental stations, experimental mills, and numbers of other experimental necessities are mentioned now and then, but generally stop right there. The fact is, popular opinion, unlimited or limited to certain distinct spheres, has to be educated to the fact that such experimental somethings are not only beneficial to them, but actually necessary. In that way experimental agricultural stations are sprouting up all over the United States, only because our large farming population, with an efficient agricultural press to agitate the subject, favored the establishments of such stations, understanding that they were of direct benefit to them; many points in relation to agriculture which were known in an arbitrary manner, were settled on firm basis, and with this the causes of many failures were explained. In fact, the value of such stations increases from year to year, as the advantages to be derived from them become more and more apparent, and are better understood. Our people have not yet had the time to understand the benefits of scientific laboratories, where research and experiments are carried out, not for gain, but for knowledge. After a while, when we settle down from the incessant hurry and worry attending the establishment of a new country, and the people are alive to their deficiencies, we will see such laboratories in the United States as are now found principally in Germany and France. As to experimental mills, the difficulty is nearer at home, and more circumscribed. If some philanthropic millwright or miller will, for instance, build such an experimental mill, he has then only done a very small share towards attaining the final end, *i. e.*, scientific milling. He may put the most competent miller of the United States in charge of that mill and may not advance a step, because that miller, who perhaps, finds no difficulty whatever to run the largest establishment successfully, may be, at the

same time, a very poor experimenter. The determination of the scientific principles of milling is a problem so delicate and manifold, that one man or one mill will, perhaps, never be able to solve it. The question is not mechanical alone, but chemistry and physics largely enter into its elucidation. A beginning can, however, be made in the right direction on broader principles: if, for instance, every miller will carefully note the amount of flour produced, and the quality and kind of fuel consumed during the process; the power of the engines, size of boiler, quality of grain, style of milling, and numbers of other points connected with the trade; tabulate such notes in some form or other, and together with the full name and address, send the results of these observations to the milling journal which he likes best. It is obvious that such statistics will prove of untold value to the profession if carried out for one year only. Of course an undertaking of this kind would take time, but as the majority of mankind have always to do a certain amount of work gratuitously, let us hope that enough millers can be found throughout the land, who are willing to combine and work towards a common end in this direction, not for direct gain, but for the benefit of the majority and future advancement.

IN 1875 the six New England states had 59,949 acres of land devoted to wheat culture; in 1883 this had increased to 79,680 acres, showing a gain of 19,731 acres, or very nearly 33 1/4 per cent. The four Middle states had 1,790,630 acres in wheat in 1875, and 2,513,500 acres in 1883, a gain of 722,870, or about forty per cent. The five Western states lying east of the Mississippi river, had in 1875, in wheat, 8,272,568 acres, and in 1883, 12,190,000 acres, an increase of 3,917,432 acres, or a trifle more than 47 per cent. The six Western states west of the Mississippi river, in 1875 had 5,684,212 acres in wheat, and 10,601,520 acres in 1883, a gain of something more than 86 per cent. The nine Territories west of the Mississippi, had 101,713 acres in wheat in 1875, and 1,208,414 acres in 1883, a gain of more than one thousand per cent. The two Pacific states in 1875 had 1,757,468 acres in wheat, which in 1883 had increased to 3,490,000 acres, a gain of 1,732,532 acres, or very close to fifty per cent. The fourteen Southern states in 1875 had 4,505,110 acres in wheat, and this in 1883 decreased to 3,980,280 acres, a loss of 524,830 acres. To recapitulate, we find the increase in wheat culture for eight years since 1875 has been about as follows:

## States and Territories by groups.

|                                  | No. |                   |
|----------------------------------|-----|-------------------|
| New England.....                 | 6   | .33 1/4 per cent. |
| Middle.....                      | 4   | .40 " "           |
| Western, east of Mississippi..   | 5   | .47 " "           |
| Western, west of Mississippi     | 6   | .86 " "           |
| Territories, west of Mississippi | 9   | 10.00 " "         |
| Pacific.....                     | 2   | .50 " "           |

We accept the foregoing figures as correct, because they are given by our esteemed New York contemporary, the *Produce Exchange Reporter*, in refutation of a statement by THE MILLING WORLD that wheat culture had "passed from the east to the west." We don't think our contemporary has made out a very strong case against us, unless it be in a sophistical sense. It admits that wheat culture has increased faster in the West than it has in the East, yet says we are wrong in asserting that wheat culture has "passed from the East to the West." We still hold to our statement. Wheat will never be a leading crop in the East. Population is becoming too dense, and land values and taxes too high to warrant its increasing culture. If our contemporary will hunt up the figures for the eight years preceding 1875 he will get at our meaning exactly. We have no idea that

the world will ever suffer because of an over-production of wheat, but we do think that as our country increases in population and wealth, much of the area now devoted to wheat-growing will be more profitably employed, and our exports of wheat will finally be nil. It may be that the venerable editor of our contemporary may not live to see that day, we, who are gray-headed, but much younger and better-looking, have serious doubts of being then in harness, all the same that day is coming.

CHEAP water transportation is an important factor in the development of an agricultural country like the great northwest, and how to solve the problem successfully, and in such a manner that economy on one hand would not be more than counter-balanced by extra expenditures on the other hand has engaged some of the best engineering minds, as well as the attention of the political economist. A continuous water communication between our great lakes and Europe, which would allow large ocean-going vessels to come to the very centers of grain and flour trade, load and depart again without any trans-shipment whatever, has always appeared as a scheme of a brilliant rosy hue. Unfortunately our Canadian neighbors took the lead in this matter by the building of the Welland canal, which in the course of time, will, beyond doubt, be sufficiently improved to allow larger vessels to pass right through it to the Upper Lakes. The question of building a similar ship-canal around the falls of Niagara, on the American side, has been agitated at various times, but was always rejected as impractical. Now the subject is broached again in a communication to the *American Miller*, giving drawings complete of a proposed ship canal between Lake Erie and Lake Ontario, through New York State. On the face of it the plan looks very feasible, *i. e.*, the originator has never been there, and undoubtedly, those whose opinion he asked for, did not know anything about the land which is so nicely drawn out in the plans. This is another case where "distance lends enchantment to the view." Without going into any detailed discussion of the project, we, with the exact knowledge of the locality at hand, venture to predict that no ship-canal will ever be built along that route, not because of its impossibility, for engineering skill can at present overcome more serious obstacles, than those, but because the capital required to build the canal would be so large that it never could pay any interests, and we are altogether too practical in the present time to sink millions and millions of dollars in an enterprise, for the simple reason that we don't want our neighbor to have the glory of a monopoly on this article. So far the canal. As for the elevator which is to lift or lower a loaded vessel up and down about 320 feet, that is a question which we would like the inventor to discuss at the forthcoming meeting of the American Civil Engineers in this city during the next month. Then its merits will be put to the test by those who are best able to form an estimate of the value of such an invention.

"YOUR valuable journal, which is the best I ever saw," is a quotation we meet with very often in print. But as we can form a judgment of merit or demerit only by comparison, the question naturally arises, how many journals does Mr. X. read which enable him to decide the question intelligently? This is very much like the old fashioned story of oyster shipments in Germany, before the establishment of railroads, when everything was sent by horse and wagon. Refrigerators and ice packing were then practically unknown, and oysters from the German ocean were apt to arrive in

Central and Southern Germany a little tainted. But epicures, who had become accustomed to tainted game and snipe entrails filled with the birds excrements, became habituated to the tainted oyster without knowing anything about it and looked upon it as a delicate morsel. When with the establishment of railroads fresh oysters were sent, they were declared unfit for consumption, because possessed of an entirely different flavor and taste. In the same way a man can become so habituated to one journal that he considers it excellent in every way, and to this, of course, he is fully entitled; when he, however, attempts to instruct others and pronounces that particular journal the "best," then he ought to show on what authority he makes such a statement and how much reliance is to be placed on his judgment in such matters.

It requires but a short time to change the harvest prospects of a country from the brightest expectations to the deepest gloom. The wheat crop of England has of late been reported in the most brilliant condition, and the prospect that less importation of breadstuffs would be needed on that account, has elated the hearts of the Englishmen in general, and of the English farmer in particular. Now, according to cablegrams of May 5, everything has changed. The weather in London and throughout the south of England has transformed in one day from mild spring temperature to winter. Snow storms with occasional interruptions of hail and sleet showers were reported as raging all through the south of England and snow fell, in some districts, several inches deep. In our issue of April 3d we translated an article from the German by Prof. Reis on "the causes of the mild winter in Europe," in which he states that a short severe winter following the mild weather was among the possibilities, and almost induced by the abnormally warm temperature. It appears from the cablegram that this prediction has been verified only too closely, and the result is that the favorable predictions made for English wheat crops will, perhaps, need a serious modification in the very near future.

THE failure of Grant & Ward, involving, as it is reported, some ten millions of dollars, has not affected the business interests of the country as disastrously as many were ready to believe it would. It, of course, has not been devoid of results, but those who anticipated a recurrence of the panic of 1873 will, in all probability, be disappointed. General business is, as every one is aware, very depressed, and this signifies caution in the extension of credits, and a disinclination for speculative ventures. So long as this is the case, a general panic would seem to be improbable.

THE questions and discussions about free trade and protection seem to be settled now again for another year. It seems strange that, although the necessity for a change in the tariff is almost universally admitted, nobody wants to take the initiative; it is always the "other man's" business which can do without a protective tariff better, or at least as good as with it. Verily, the money bag is the most tender spot in the anatomy of the Americans.

A BRIEF note advises us of the approaching marriage of Mr. Fred J. Clark, news-editor of our contemporary the *North Western Miller*. "Fred" has hundreds of friends in and around Minneapolis who will wish him and the lady of his choice, a long life of unalloyed happiness, but none will express such wishes with more sincerity and heartiness than THE MILLING WORLD.



ESTABLISHED 1856.

**EUREKA GRAIN CLEANING MACHINERY | GENUINE DUFOR BOLTING CLOTH**

OVER 18,000 MACHINES IN USE.

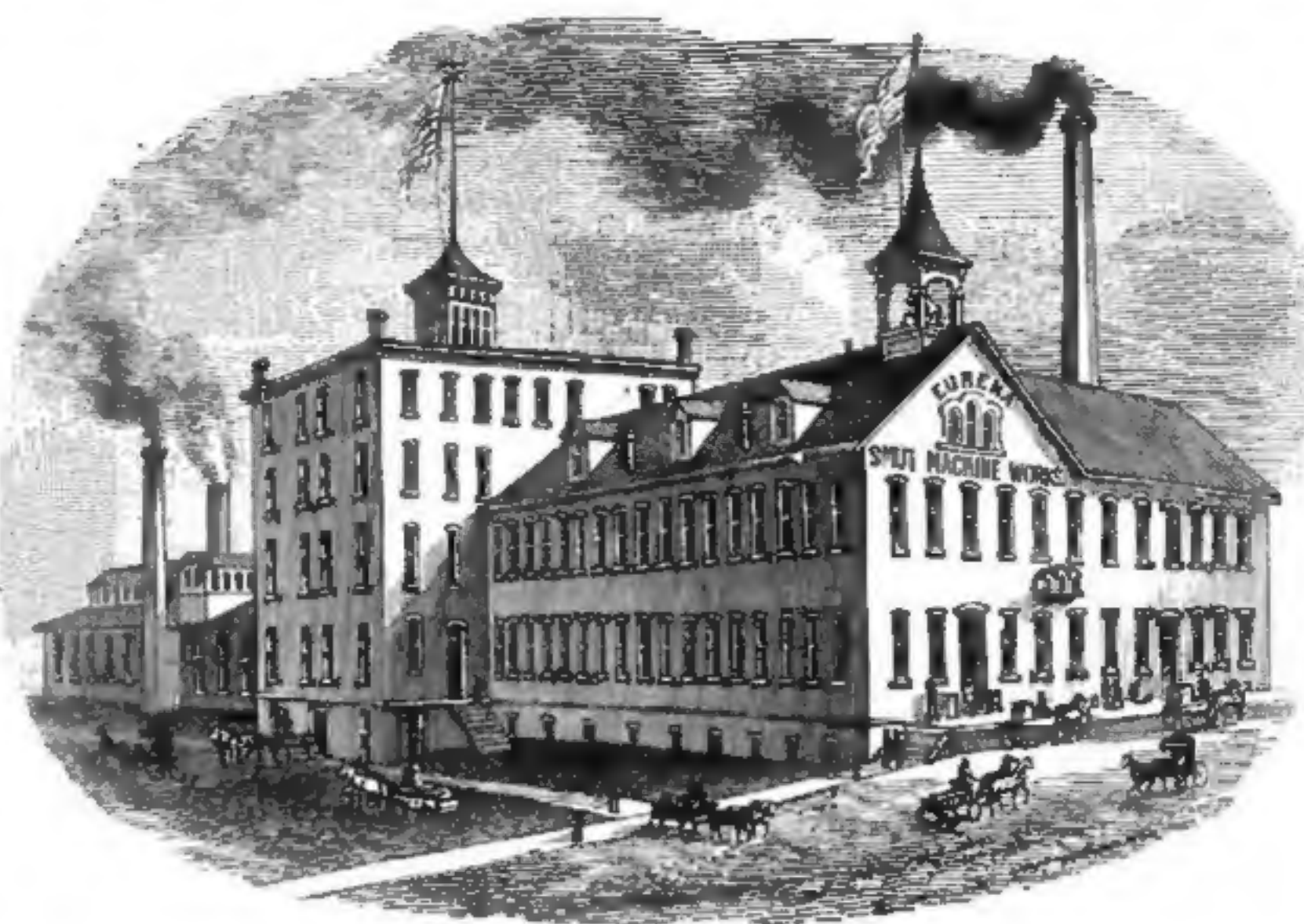
OUR LINE COMPRISES

The Eureka Separator,  
The Eureka Smutter and Separator,  
Eureka Brush Finisher,  
The Eureka Magnetic Automatic Separator,  
Silver Creek Flour Packer.

Our establishment is the oldest, the largest and most perfectly equipped of its class in the world and our machinery is known and used in every country where wheat is made into flour.

**HOWES & EWELL,**  
SILVER CREEK, N. Y.

European Warehouse and Office: 16 Mark Lane, London, E. C. England.  
Gen. Agency for Australian Colonies and New Zealand.  
Thos. Tyson, Melbourne, Victoria.



We handle this justly celebrated cloth in large quantities, and can fill all orders upon receipt. For such as may prefer a cheaper grade, we offer our

**ANCHOR BRAND BOLTING CLOTH.**

Guaranteeing it to be equal in every particular to any other cloth on the market, except the Dufour. We have handled it for years, have sold thousands of yards of it, and know it will fully sustain our representations.

Send For Samples of Cloth, Our Style of Making Up, and Prices.

**HOWES & EWELL,**  
SILVER CREEK, N. Y.

**THE IMPROVED MORSE ELEVATOR BOLT**

THE KNICKERBOCKER CO.

MILWAUKEE, WIS., March 20, 1884.

Gents: Your Bolt is working well and beats anything in the way of a Bolt, centrifugal or any other, that has yet been invented. As a general thing we do not like to certify to a thing on so short a notice, but your machine is an exception. We will experiment as we have opportunity and see how many more machines we can profitably use. Wishing you all success, we remain,

Your truly,

E. SANDERSON &amp; CO.

THE KNICKERBOCKER CO.

JANESVILLE, WIS., April 9, 1884.

Gents: I am fully satisfied with your Morse Elevator Bolt, it is a wonderful machine, and is as far ahead of the old Bolting Chest of Reels as the roller process is ahead of stone milling. Enclosed find draft for the No. 1 sent me, please forward the two No. 1 Bolts bought of your agent, one is for bolting patent stock, and the other low grade stock.

Yours Truly,

C. W. HODSON.

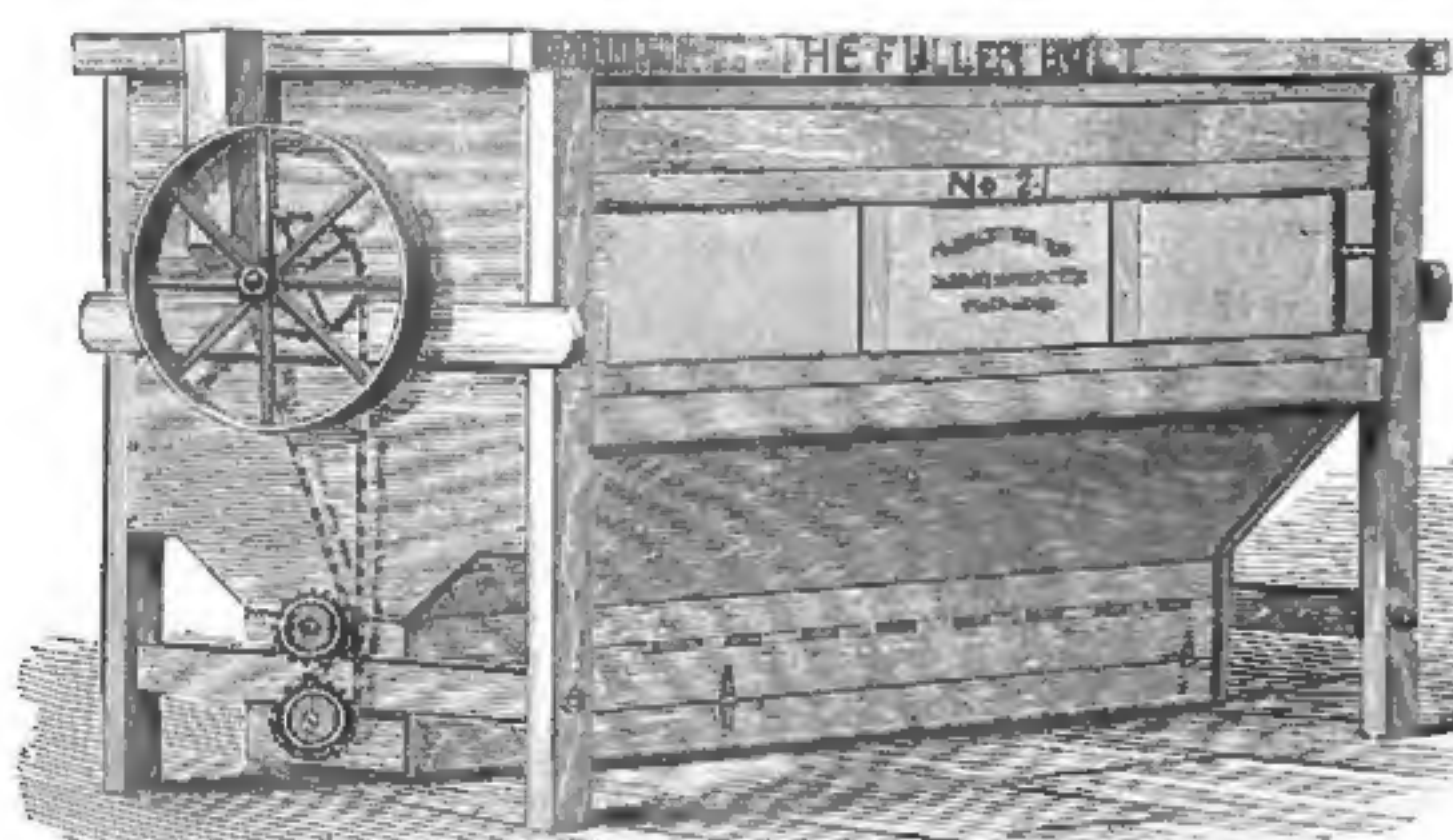
THE KNICKERBOCKER CO.

CLEVELAND, OHIO, April 3, 1884.

Dear Sirs: Regarding the Morse Bolt we cannot say enough in its praise. We have three different makes of Centrifugal Reels in our mill, and having given the Morse Bolt a fair trial alongside of them we can certify as to their merits. We have demonstrated the Morse Bolt will handle double the quantity the Centrifugal will and produce a better flour and cleaner finish. In fact any material in the mill can be handled with more economy and better results than upon any system we know of. The Morse Bolt being under the complete control of the operator is a point in its favor that cannot be over-estimated, and we believe when its merits are more widely known it will supercede the present mode of bolting.

Yours respectfully,

M. C. DOW &amp; CO.

**The Knickerbocker Co., Jackson, Mich.****The Fuller Flour Dresser & Bolt**

(Patented.)

This Bolt will clean fine middlings and soft, specky returns better than any known device. It will do better and cleaner work, will last three times as long, cost three-fourths less to run, take three-fourths less power, and require less attention than any centrifugal bolt made. While the speed of the Fuller Bolt is only 14 revolutions per minute, the capacity is more than double that of the old style reel. Send for Illustrated Catalogue, Price List, etc.

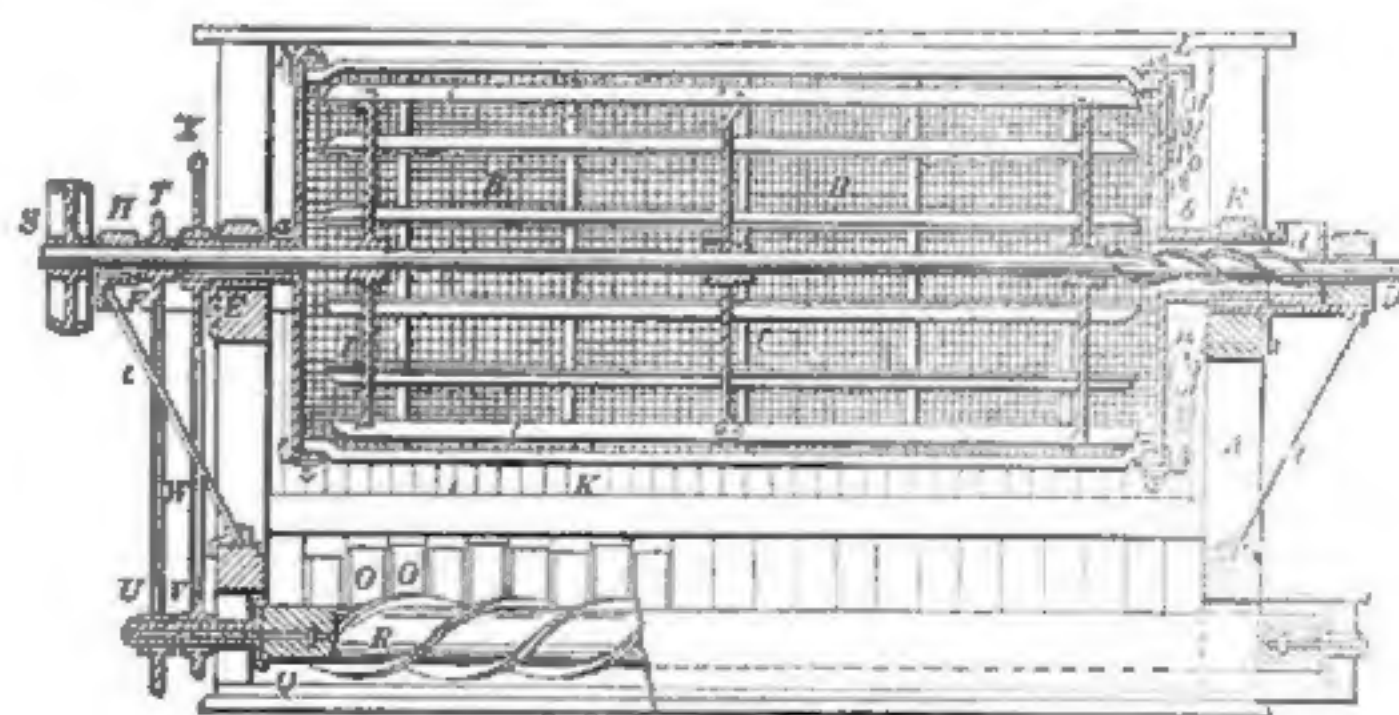
**WM. F. MORSE, - LAFAYETTE, IND.**

Sole manufacturer of the Fuller Bolt and the Eagle Middlings Purifier.

**JOHN J. WALTERHOUSE,**

PRACTICAL MILLWRIGHT, DRAUGHTSMAN AND

Contractor for the Erection of Flouring and Grist Mills



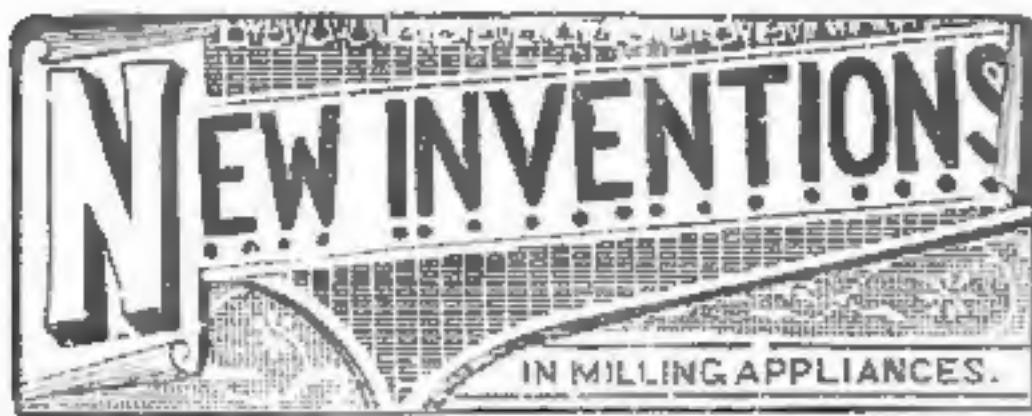
PATENTEE OF  
WALTERHOUSE'S  
CENTRIFUGAL REEL.

ROLLER MILLS A SPECIALTY.

GENERAL AGENT FOR STEVENS ROLLS AND GENERAL MILL MACHINERY.

**VINCENNES, INDIANA.**

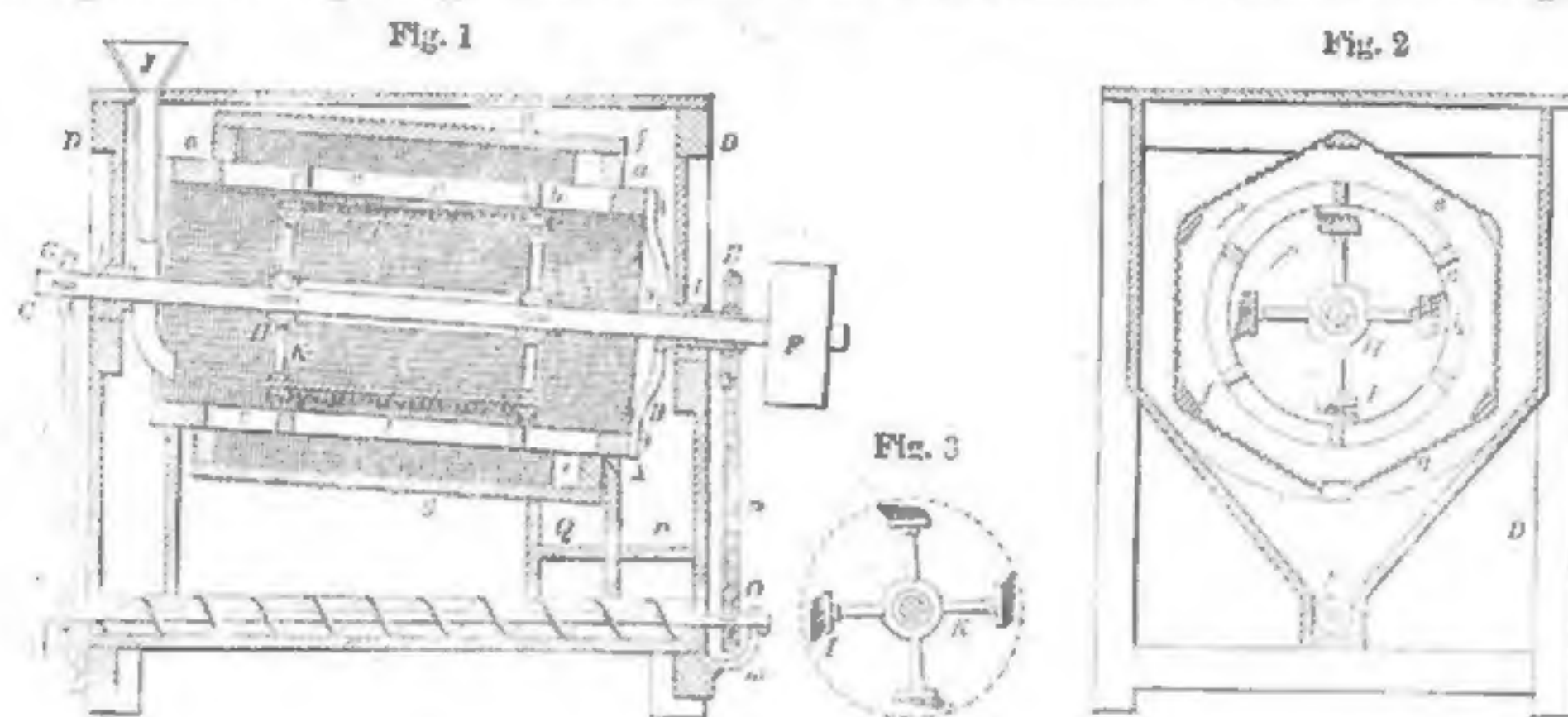




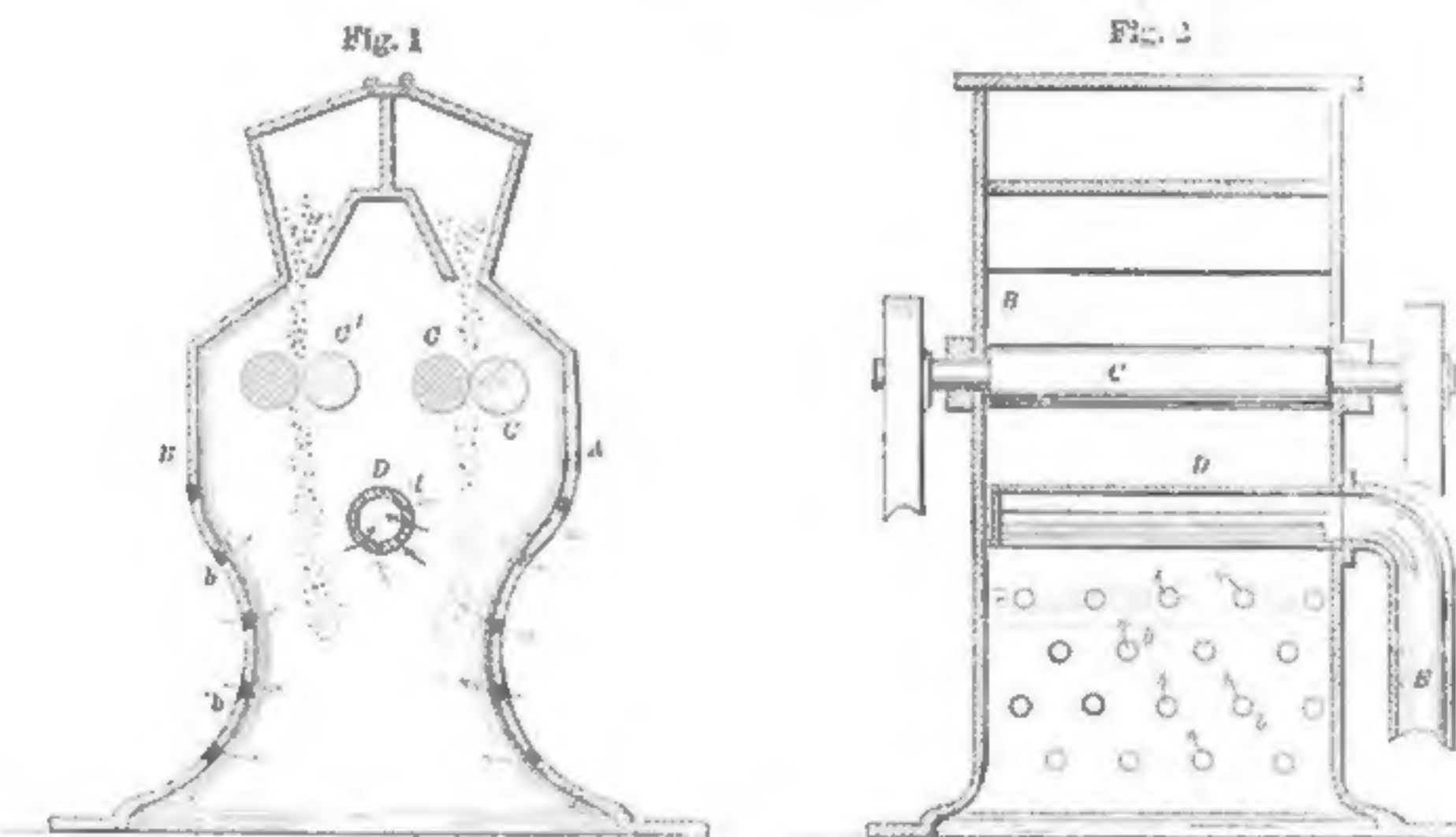
### MACHINE FOR BRUSHING AND SCOURING GRAIN.

Letters Patent No. 297,782, dated April 29, 1884, and issued to Louis Gathmann, of Chicago, Illinois. This invention relates to machines for brushing and scouring grain, and more particularly to machines for brushing, scouring, purifying, and separating creased or lobated grain after the same has been split through its crease. In the accompanying drawings, Figure 1 represents a longitudinal vertical section of the entire machine, and Fig. 2 a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a modification of brushes at an angle. A denotes the cylinder, the skeleton frame of which is composed of end rings,  $a$   $a'$ , and intermediate rings,  $b$   $b'$ , connected by longitudinal ribs  $c$ . The interior of this skeleton is covered with wire screen or perforated sheet metal  $d$ , jointed or lapped to form a true cylindrical surface. At a short distance from each end of the cylinder-frame are fastened hexagonal-rings  $e$ , which are connected by triangular bars  $f$ , secured with their ends upon the corners of such rings  $e$ , and over these bars  $f$  are stretched sheets of bolting-cloth  $g$ . To ring  $a$ , at one end of cylinder A, are secured the arms of a spider, B, having a hub,  $h$ , which is sleeved or loosely mounted upon the main shaft C, and forms the journal that rests in box  $i$  of main frame D. A sprocket-wheel, E, is mounted upon the projecting end of hub  $h$ . The projecting portion of ring  $a'$ , at the opposite end of cylinder A, rides and is supported upon two or more rollers or wheels. (Not shown in the drawings.) One end of main shaft C is journaled in hub  $h$  of spider B, and its opposite end is journaled in a box,  $j$ , of frame D. Upon the end of main shaft C, that projects beyond hub  $h$ , is mounted the driving-pulley F, and upon its opposite overhanging end is mounted a sprocket-wheel, G. Two spiders, H, are secured upon shaft F, each consisting of a hub having four round iron arms, K, that are screw-threaded on their ends for adjustably securing by nuts the bars or plates I, that are provided with bristles to form the brushes. These brushes are only the length of the space between rings  $b$  and  $b'$  of cylinder A, and the bristles on one edge of each bar I are longest and become shorter toward the opposite edge in such a manner that the face of each brush is on an oblique line to the radial arms, and that the longer bristles of the brushes only come in close proximity with screen  $d$ . The bristles of the brushes are also set on angle, as shown in Fig. 3. The main shaft C, as well as the cylinder A, is a little inclined to cause the grain to move from one end to the other, the spider-support and driving-pulley end being the lower. On ring  $a'$  of cylinder A is secured the inwardly-projecting ring-flange  $l$ , inside of which the half-kernels of the grain are fed through a spout,  $m$ , from a hopper, J. The main shaft C, which carries the brushes, and the cylinder A, are rotated in the direction indicated by the arrow in Fig. 3, the shaft C at about one hundred revolutions per minute, and the cylinder A at about twenty-five revolutions per minute, the motion being transmitted to A from sprocket-wheel G on shaft C by an endless chain, L, and sprocket-wheel M, that is mounted upon the end of the shaft of a screw-conveyer N, and again from a sprocket-wheel, O, mounted upon the opposite end of such screw-conveyer shaft by an endless chain, P, to sprocket-wheel E, that is secured upon the hub  $h$  of spider B. By this arrangement the screw-conveyer is not only rotated itself, but also forms the intermediate or counter-shaft for transmitting motion from

shaft C to cylinder A. This conveyer is arranged within a trough in the bottom of frame D, and is journaled in bracket-bearings  $n$ , bolted against the outside of frame D. The split grain being fed into the end of cylinder A, inside of flanges  $l$ , the middlings, germs, and other small particles that become separated during the process of splitting the grain will pass through the perforations of screen  $d$ , between rings  $a'$  and  $b'$  before the half-kernels come into contact with the brushes I, and will drop through upon the bolting-cloth  $g$ . The meshes of the bolting-cloth  $g$  are to be large enough to allow the germs and other small impurities to pass through and drop into the conveyer-trough, whence they are carried off and discharged through one end of the machine. In the same manner will be discharged and carried off all dirt and impurities that are removed from the half-kernels by the brushes. The bolt-cloth  $g$  is not stretched over the entire length of bars  $f$ , but leaves an open margin,  $z$ , between its edge and the lower hexagonal ring,  $e$ , through which the middlings that passed through screen  $d$ , but were too large for the meshes of the bolting-cloth, are discharged into the spout Q. The half-ker-



MACHINE FOR BRUSHING AND SCOURING GRAIN.



ROLLER MILL.

nels of grain rolling down in the inclined rotating screen  $d$  will now be swept upward again and again by the brushes I, that are rotated with a greater velocity than the cylinder A, and by their peculiar oblique faces and angular positions of their bristles they will hold the grain in the wedge-shaped spaces between the bristles and the screen, and will rub and roll the several kernels against such screen until such kernels have moved beyond the brushes, thereby loosening and separating all the dirt and foreign matter that adhered to the kernels of the grain and that particularly collected in the crease of the same. After the half-kernels have been thus brushed and scoured, they have yet to pass over the portion of screen  $d$  between rings  $a$  and  $b$  of cylinder-framing A, where all impurities still mixed with or partly adhering to the grain will be sifted out, while the half-kernels are discharged from the lower end of cylinder A into spout R, and are now in condition for further reduction. It is not essential that the main shaft and cylinder A should be inclined, since by arranging the brushes on a spiral line such cylinder can be placed horizontally and still the grain will be moved from end to end in such cylinder; or the screen  $d$  can be made conical for feeding the grain into

the small end and discharging it from the larger end.

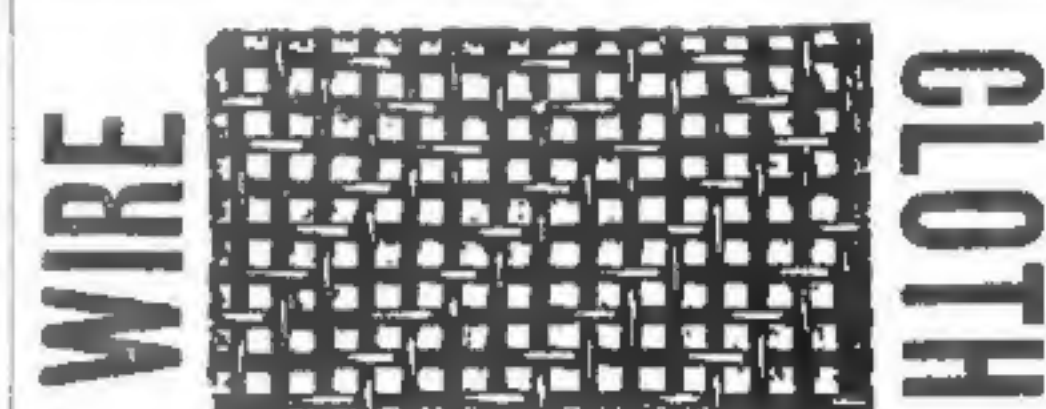
### ROLLER MILL.

Letters Patent, No. 297,890, dated April 29, 1884, and issued to Rosia W. Welch, of Baltimore, Maryland, assignor of one-half to Wm. Cammack, of Washington, district of Columbia. This invention, which relates to the purification of the meal by air-currents immediately after the crushing has taken place, and is an improvement on the devices shown in the patent to C. M. Roberts, No. 193,039, dated July 10, 1877, consists in the details of construction, and combination of parts, whereby a suitably-constructed housing or casing for roller-mills is provided to practice the process of purifying the meal by means of air currents immediately after the grain is ground or crushed. Fig. 1 is a vertical central cross-sectional view of a roller mill provided with my improvements. Fig. 2 is a vertical central sectional view on a plane at right angles to the plane of Fig. 1. In the drawings, A B are the sides of the casing, in which are mounted two pairs of rollers in the usual manner. Across the casing, in a

air, and the meal, in falling from the rolls, drops in a line between the sides provided with the perforations and the central slotted pipe, D. The slot  $d$  in the center of the bottom of pipe D, renders it self-cleaning. The exhaust through pipe E draws a current of air through openings across the path of the falling meal into slotted tube D, and this current of air, properly regulated, traverses the path of the falling meal, and picks up the light fluffy "specks" and "fuzz," which constitute the chief obstacle to the purification of flour and middlings.

**WILHELM & BONNER,**  
**Solicitors of Patents,**  
Attorneys and Counselors in  
Patent Causes.

No. 284 Main St., Buffalo, N. Y.

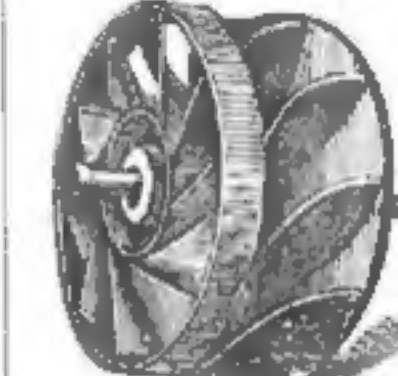


**FOR FLOURING MILLS.** Made expressly for Steel or Plated Wire Cloth, even mesh, and superior in every respect to any cloth in the market. Also heavy steel, tempered Wire Bolting and Bran Duster Cloths.

Manufactured by

E. T. BARNUM Wire & Iron Wks., Detroit, Mich

### DeLOACH WATER WHEELS



From 2-10 to 2,000 horse power. Simplest, most durable, best gate for holding the water, fully equal in percentage of power to any wheel made, and price places it in reach of all. Send for illustrated catalogue. A. A. DeLOACH & BRO., Manufacturers, also of Milling Machinery, Atlanta, Ga. See Mention this paper.

**JOHN C. HIGGINS & SON,**

Manufacturers and Dressers of

**MILL PICKS.**

163 KINZIE ST., CHICAGO.



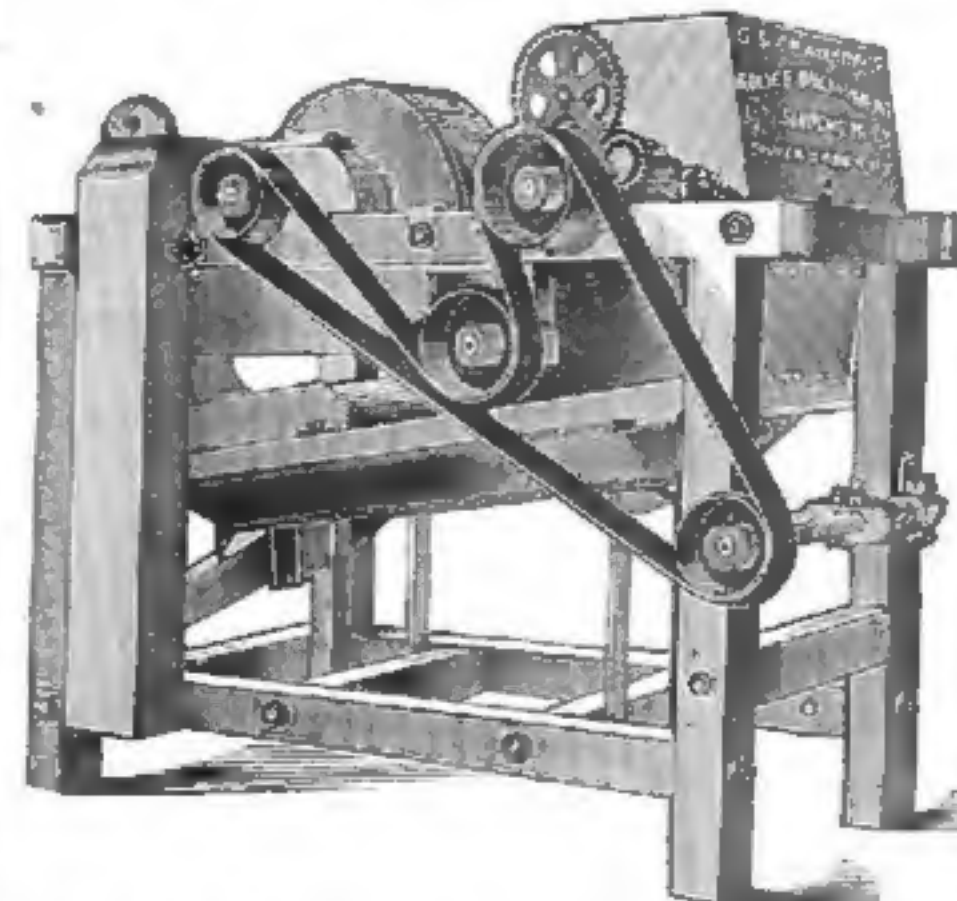
GOLD MEDAL—SPECIAL, 1ST ORDER OF MERIT.



Picks will be sent on 80 or 60 days' trial to any responsible Miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is manufactured expressly for me at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every State and Territory in the United States and Canada. Send for Circular and Price List.

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**QUEEN CITY PRINTING INK CO.**  
CINCINNATI, O.

## BUCKWHEAT MILLERS



WILL FIND IT TO THEIR DECIDED ADVANTAGE TO INVESTIGATE THE CONCEDED MERITS OF

**CRANSON'S SILVER CREEK ROLLER BUCKWHEAT SHUCKER**

ITS SUCCESS IS BEYOND QUESTION. ITS VALUE HAS BEEN DEMONSTRATED IN MORE THAN 800 CASES. IT IS THE ONLY PERFECT BUCKWHEAT SHUCKER IN THE WORLD.

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# THE GEO. T. SMITH IMPROVED MIDDINGS PURIFIER.

The Geo. T. Smith Purifier was the first successful Sieve Purifier ever used in this or any other country. The demand for it has steadily increased from the day the first machine was started.

ADAPTED TO ALL SYSTEMS OF MILLING. FIFTEEN SIZES, SUITABLE FOR MILLS OF ALL CAPACITIES.  
SINGLE, DOUBLE AND ASPIRATOR MACHINES.

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ALONE

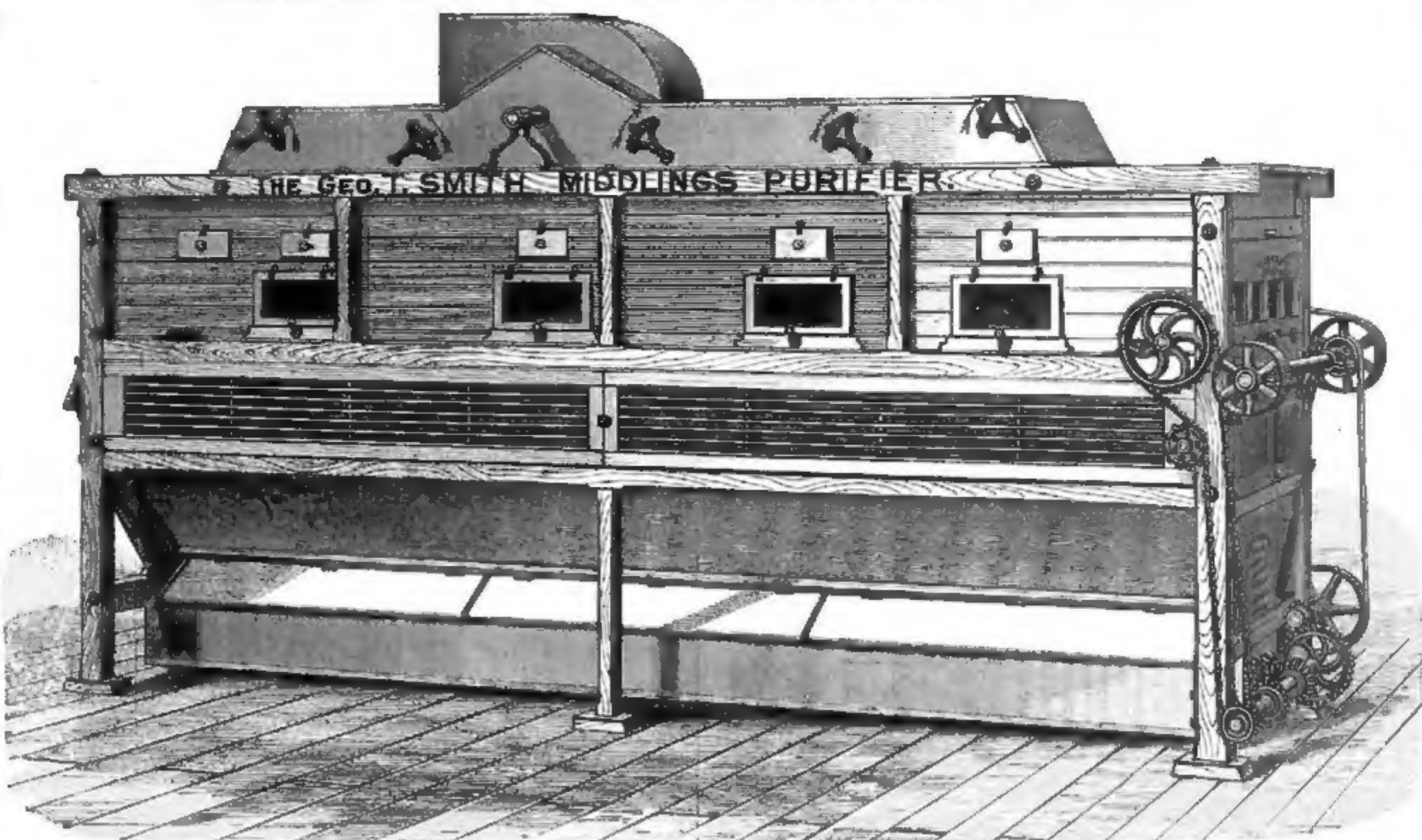
7,000

And More are Now Running.

## EXCLUSIVE FEATURES.

Patent Automatic Brush.  
Patent Self-Regulating  
Feeding Device.  
Patent Coll-Spring Ec-  
centric Connection.

EASILY ADJUSTED.



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7,000

And More are Now Running.

## EXCLUSIVE FEATURES.

Patented Application of  
Graded, Controllable Air  
Currents.  
Patent Cloth Tightener.  
Patent Double Conveyers,  
in the Same Horizontal  
Plane.

LIGHT RUNNING.

2,500 SOLD IN 1882. The sales for 1883 to date are double what they were for the same months last year. 2,500 SOLD IN 1882.

SPECIAL NOTICE.—We guarantee every owner of a Geo. T. Smith Middlings Purifier absolute immunity from loss by suits for infringement.

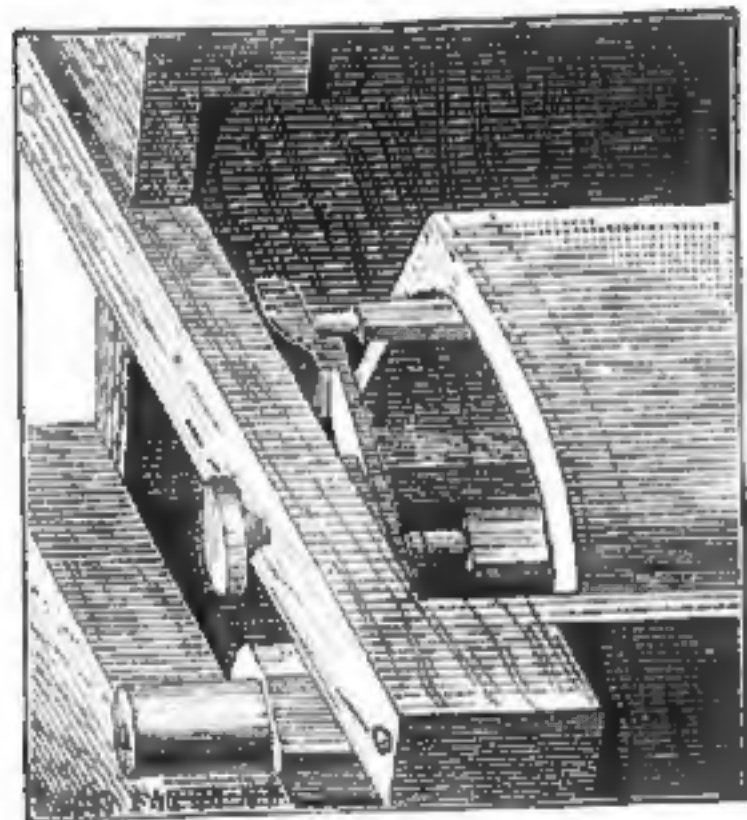
We are giving greater attention than ever before to the mechanical details and material used in the construction of our machines, having substituted STEEL SHAFING for iron, and adopted HARD WOOD for frame, and notwithstanding the immense outlay incurred in securing protection under all existing patents, and the cost of constant improvements, our PRICES REMAIN UNCHANGED.

# Geo. T. Smith Middlings Purifier Co., Jackson, Mich.

## MILLS

Parties desiring to sell, buy, or lease mill property should not fail to write us. Our List covers various sections of country, and we have mills at all prices, and can offer some decided Bargains in the West.  
**GILLSON, BENJAMIN & CO.,**  
97 Metropolitan Block, CHICAGO, and cor. 3d Ave. and 3d Street, MINNEAPOLIS.

## FISKE'S BOLTING REGULATOR.



Simple,  
Substantial,  
Easily Controlled.  
Saves Time,  
Saves Money,  
It is Indispensable.

## READ THIS TESTIMONY.

SEND US DOWN FOUR SET MORE.

KENNEDY, N. Y.  
J. E. FISKE, ESQ., JAMESTOWN, N. Y.  
Dear Sir: You may send us down four set more of your Bolting Regulators, and will see you later for three or five sets more.  
Respectfully,  
PHILLIPS & THOMAS.  
COULD HARDLY GET ALONG WITH-  
OUT IT.

CLEVELAND, OHIO.  
Mr. J. E. FISKE, JAMESTOWN, N. Y.  
Dear Sir: Yours of 30th ult. received. It is now over sixty days since we purchased your "Bolting Regulator," and find its work fully up to your recommendation. As we are situated, we could hardly get along without it, and we cheerfully recommend its use to all millers.  
Yours truly,  
M. C. DOW & CO.

ARE GIVING GOOD SATISFACTION.

NEW CASTLE, PA.  
J. E. FISKE, JAMESTOWN, N. Y.  
Dear Sir: Yours of 12th to hand, in reply will say so far your Regulators are giving good satisfaction.  
Yours truly,  
J. C. WILSON & CO., Limited.

PARTICULARLY EFFECTIVE ON SOFT STOCK.

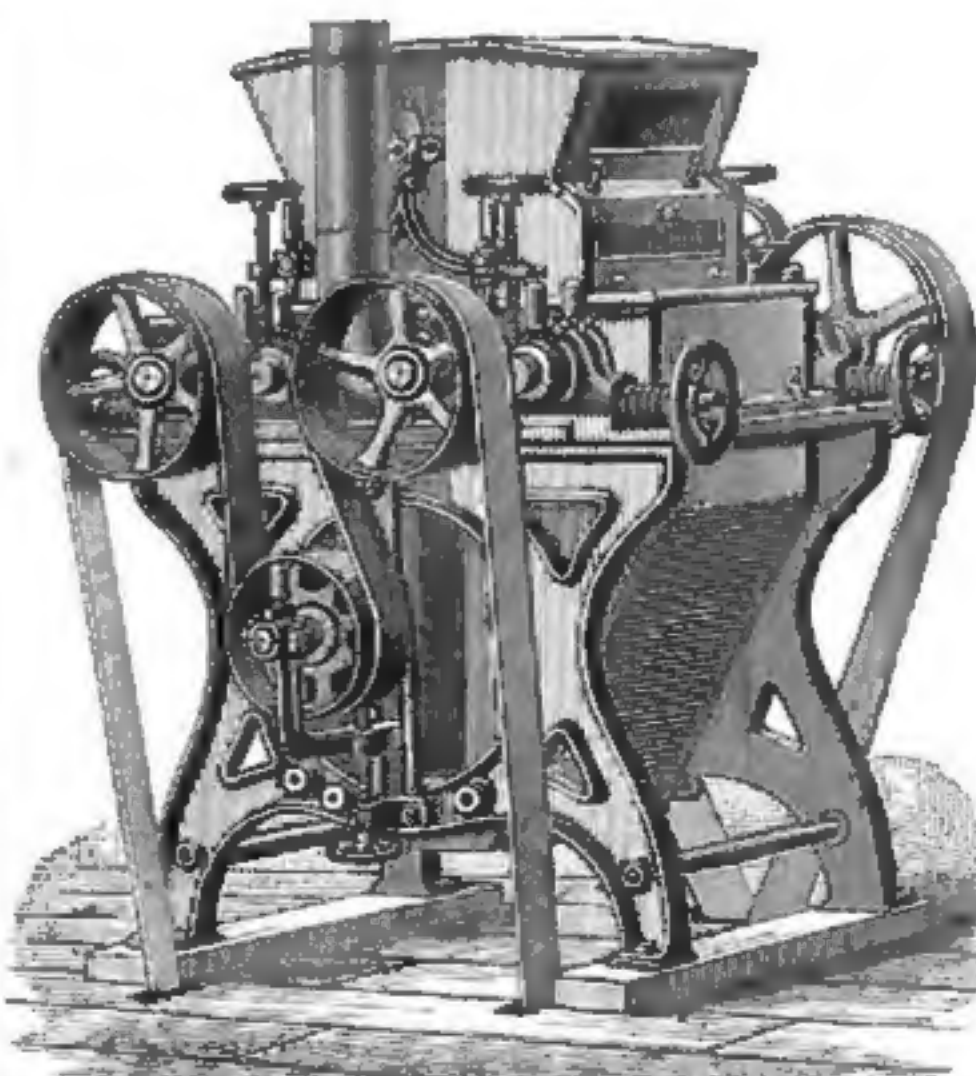
JAMESTOWN, N. Y.  
J. E. FISKE.  
Dear Sir: The three Bolt Regulators bought of you, come fully up to your recommendation, and we find them particularly effective on soft stock.  
Yours truly,  
GILBERT & JONES.

Your Orders are Respectfully Solicited. Manufactured and Sold Exclusively by

J. E. FISKE, JAMESTOWN, N. Y.

## THE ORIGINAL SIX-INCH ROLLER MILL.

## THE BEST ROLL IN THE MARKET RICKERSON'S PATENT IMPROVED ROLLER MILL.



Our six by twenty rolls weigh 175 pounds each, making 700 pounds to drive in a double set roller mill, as against 1800 pounds in the old style mill; this fact enables us to run with greater speed, with no danger of hot journals, hence our greater capacity. Produces better results, because there is less Pulverizing and Better GRANULATION, the point of contact being much less on a SIX-INCH ROLL than the old system; the STOCK BEING KEPT LARGER and more middlings produced on each reduction. It is a well established fact that the object in gradual reduction milling is to make as large a percentage of middlings as possible, and we claim to make MORE MIDDINGS from a bushel of wheat than ANY OTHER ROLLER MILL, and we are prepared to prove our claim. The MORE MIDDINGS the greater percentage of PATENT FLOUR, and better color of ALL grades. We build the only Roller Mill with PATENT EXHAUST ATTACHMENT for taking away all GENERATED HEAT, thus doing away with the GREATEST ANNOYANCE that millers have experienced in running the gradual reduction system, at the same time keeping the stock cooler as it passes

to the Reels and Purifiers, consequently the separations are made more easily. We use nothing but the Ansonia Chilled Iron Roll, with steel journals, ground, and run them entirely with LONG belts. With a feed device for throwing out and in easily, with a leveling device that is positive and perfect, and an adjustment so entirely positive, that feed can be stopped or cut-off, and put on again without readjusting rollers. WE DO NOT DEPEND UPON THE STOCK TO KEEP OUR ROLLS APART. We are prepared to furnish plans for our Gradual Reduction system on short notice, and fill orders for our Mills promptly. We make both Corrugated and Smooth Rolls, Twelve, Fifteen, Eighteen and Twenty Inches Long and Six Inches in Diameter. Prices Sent on Application. Correspondence solicited. Address,

# O. E. BROWN MANUFG. CO.

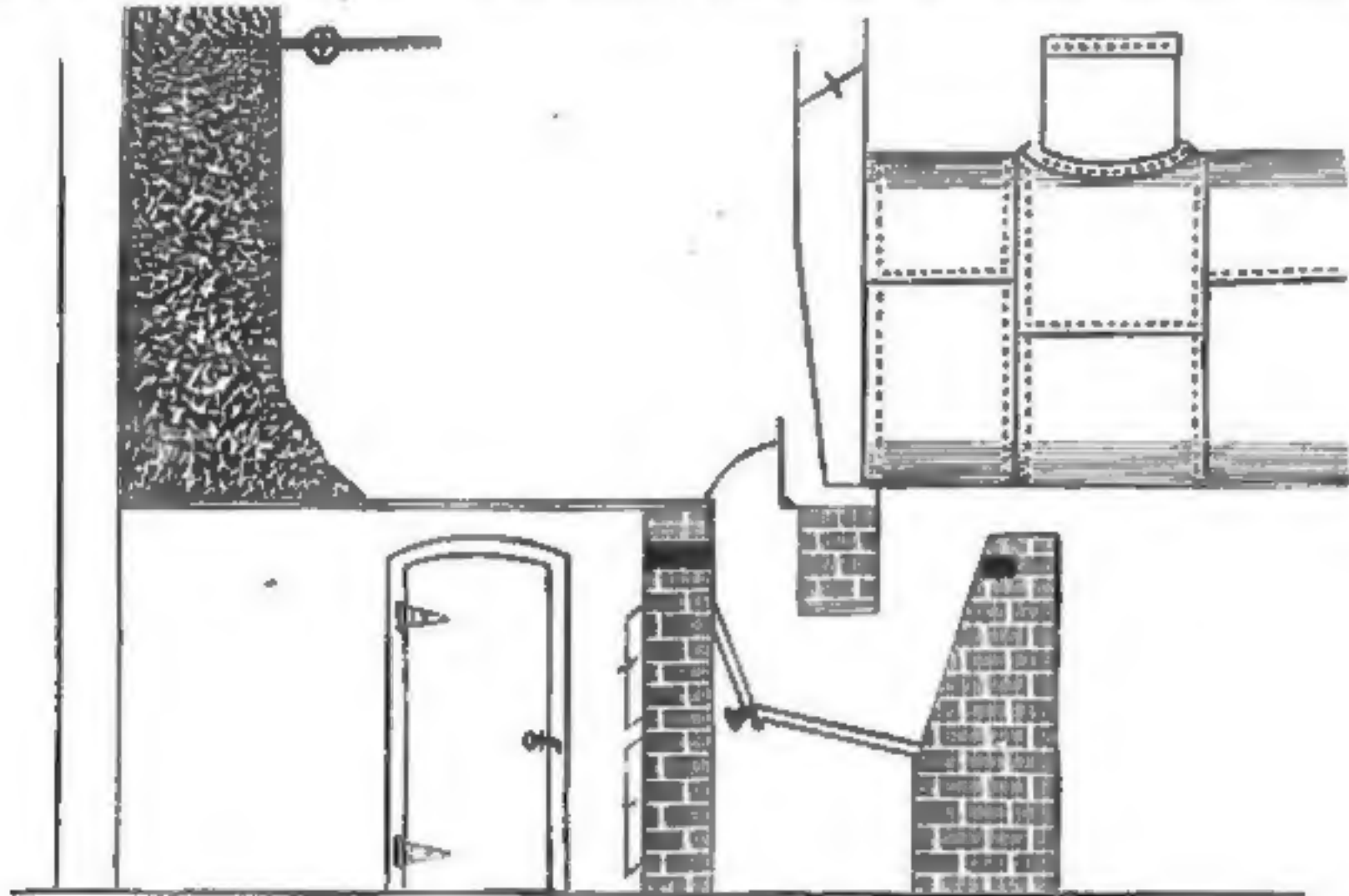
GRAND RAPIDS, MICHIGAN.



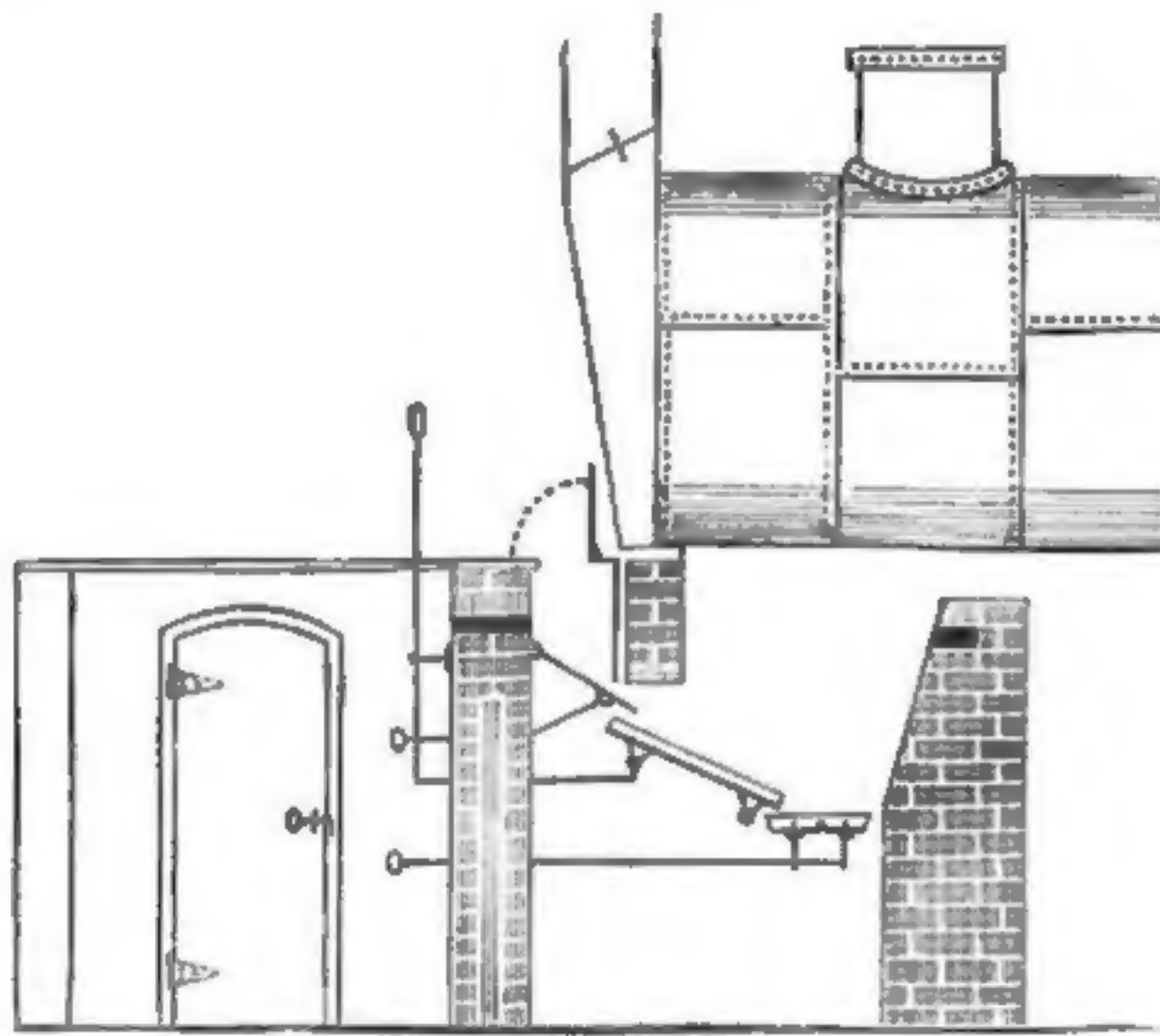


### THE BACKUS BASE-BURNING, SMOKE-CONSUMING BOILER FURNACE.

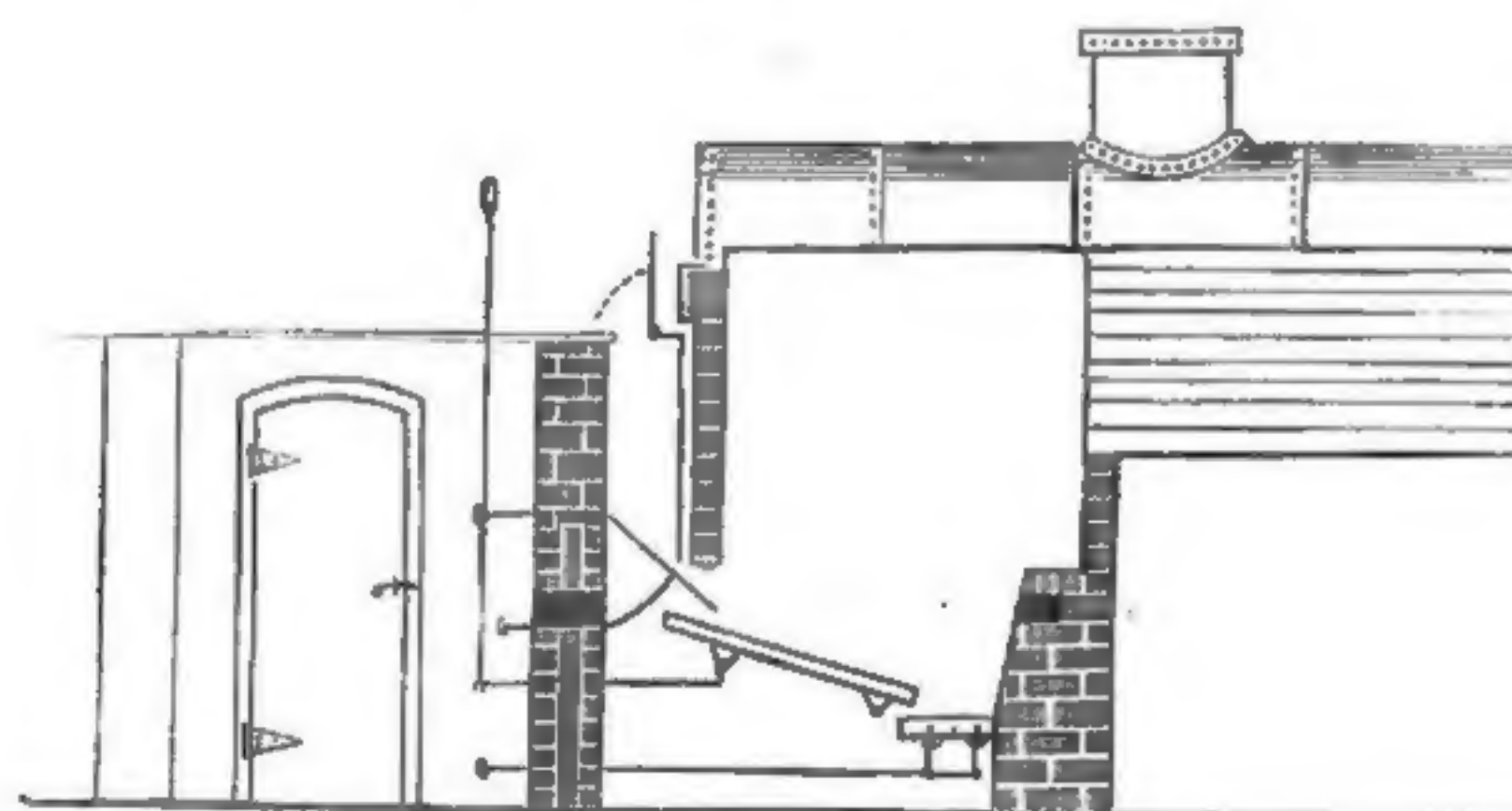
BY the accompanying cuts we illustrate the different applications of this new device. No. 1 represents a furnace constructed for the consumption of light fuel, No. 2 represents the application as made to the ordinary boiler setting for the consumption of coal, and No. 3 represents a locomotive stationary boiler which can be used for coal or light fuel. The setting of this furnace is claimed to be more economical than the ordinary method, as the cast iron front



No. 1.



No. 2.



No. 3.

### THE BACKUS BASE-BURNING, SMOKE-CONSUMING, BOILER FURNACE.

is dispensed with, with the exception of the necessary breeching. There being no opening of doors, no current of cold air is allowed to cool off the boilers. The fireman being on the feeding floor at or near the line of the lower side of the boiler, has a more perfect command of his work, and can readily supply a battery of four boilers or more, either with light fuel or coal. If coal is being used, the hopper needs to be kept filled. The fuel being moved forward on an inclined grate operated by a lever, deposits the slag and clinkers on a rocking grate at the extreme back end of the furnace, running at right angles with the inclined grate, where it is readily broken up and discharged into the ash pit without disturbing or interfering with the fire. The work of breaking up and discharging the clinkers from the fire is very simple and effective, and there

can be no waste of fuel. It can readily be seen that results are reached with great economy of labor and fuel. The application of this furnace can be made to most existing boilers at a nominal expense and the saving by the application, it is claimed, will soon compensate for the change. The Backus Company, 505 Fort street West, Detroit, Mich., will supply all further desired information upon application.

British Columbia, like the United States, is checking Chinese immigration. Two anti-Chinese bills have been already passed, the first taxing all Chinese arrivals over fourteen years 10 dollars; and 10 dollars per annum, with 40 dollars fine for not having a license. Collectors disobeying this order are fined 100 dollars, with a similar

fine for false returns in cases of Chinese employers. So the bill runs on through a gamut of fines, with 100 dollars for possessing opium, and 100 dollars for exhuming dead Mongolians. "Truly," remarks a contemporary, "the British Columbians, so long impoverished, have at last struck a source of revenue, unless the Chinese forget to go there."

We are told that experiments made show that the pressure required to punch iron plates is as follows:  $\frac{1}{8}$ th hole in  $\frac{1}{8}$ th plate, 2 $\frac{1}{4}$  tons;  $\frac{1}{4}$ -inch in  $\frac{1}{4}$ -inch, 6 $\frac{1}{2}$  tons;  $\frac{3}{8}$ -inch in  $\frac{3}{8}$ -inch, 13 tons;  $\frac{1}{2}$ -inch in  $\frac{1}{2}$ -inch plate, 22 tons;  $\frac{5}{8}$ -inch in  $\frac{5}{8}$ -inch, 33 $\frac{1}{2}$  tons;  $\frac{3}{4}$ -inch in  $\frac{3}{4}$ -inch, 47 $\frac{1}{4}$  tons;  $\frac{7}{8}$ -inch in  $\frac{7}{8}$ -inch, 62 $\frac{1}{4}$  tons; 1-inch in 1-inch, 80 tons. Approximately, to find the pressure required to punch any hole mul-

tiply the diameter of the hole by the thickness of the plate, and this by 88 as a constant factor, the product equals pressure in tons.

The theory that boiler explosions are often due to the absence of gases in water, and are due to the disturbance of the equilibrium formed during the night, by the opening of the fires in the morning, is contradicted by the statistics of the Hartford steam boiler inspectors, which show that the large majority of explosions occur during working hours, and only about ten per cent. early in the morning.

Base ball making is one of the most quiet industries which attract little or no attention from the busy world, but proves unusually remunerative to those engaged in them. Last year over 5,000,000 balls were manufactured in this country, and it is estimated that 7,000,000 base balls will be knocked into the greater nowhere the coming season.

A correspondent to the *Iron Trade Review* records the fact that he has rolled sheet iron of one-fourteen-thousandth inch in thickness. Of course it was of no use, and merely made to show how thin iron could be rolled. It would burn like paper if a lighted match was applied to it.

It is reported that petroleum has been found thirty miles north of New Salem, Dakota, about forty miles northwest of Bismarck.

### Improved Success

#### Percentage.

|                         |       |
|-------------------------|-------|
| Full Gate.....          | 86.29 |
| $\frac{3}{4}$ Gate..... | 86.07 |
| $\frac{1}{2}$ Gate..... | 81.90 |

This Wheel is Durable and Cheap.

Send for Pamphlet to  
S. MORGAN SMITH,  
YORK, PA.



### DWIGHT CUSHMAN,



MANUFACTURER OF  
The Cushman Scroll Water  
Wheel, Combination Turbine  
Water Wheel, Iron Flumes for  
the Combination Wheel.  
The Scroll Wheel Needs  
No Flume.  
Also Mill Gearing and Shaft-  
ing of every description.  
Prices low. Send for Circular  
and Prices before buying any  
other Wheel.

DWIGHT CUSHMAN, HARTFORD, CT.

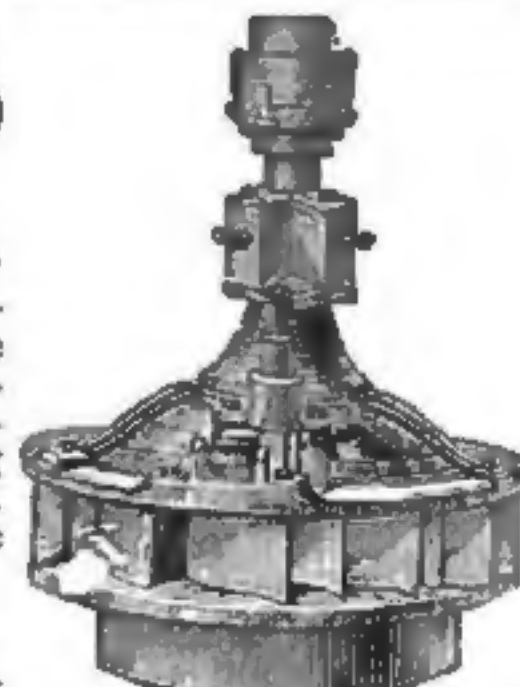
### MERCER'S

#### RELIABLE

#### Turbine Water Wheel.

This wheel is acknowledged one of the best on the market. Has valuable improvements in the construction which is commanding the attention of buyers. Send for catalogue and price list.

T. B. MERCER,  
WEST CHESTER, PA.  
CHESTER CO.,



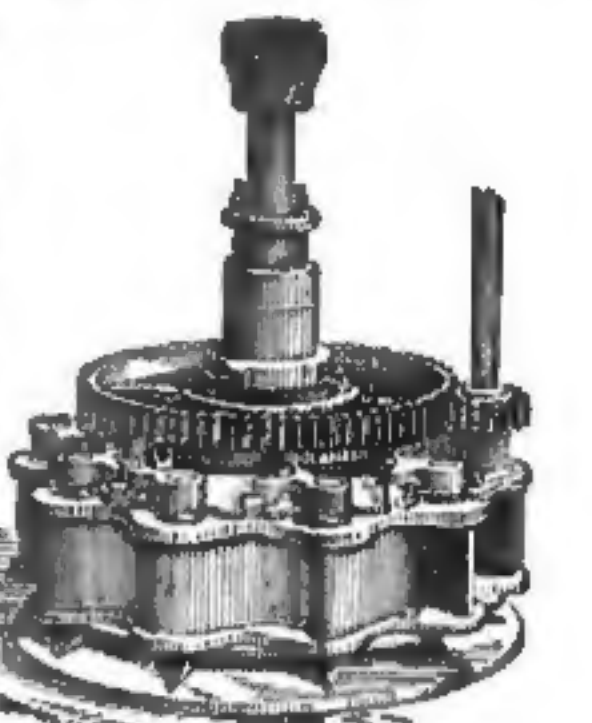
### BURNHAM'S IMPROVED Standard Turbine

IN THE  
Best constructed and finished,  
gives better Percentage, more  
Power, and is sold for less  
money, per horse power, than  
any other Turbine in the world.  
New Pamphlet sent free by

Burnham Bros., York, Pa.

### The Watertight Turbine

Has the best gate in existence. Don't leak. Don't clog. Guaranteed to give better part gate results than any other wheel. Investigate the claims of this wheel before purchasing. Sales steadily increasing. Send for new illustrated catalogue just out.



WM. BARTLEY & SONS, BARTLEYVILLE, N. J.

### LESNER'S IMPROVED TURBINE.

Simple,  
Durable,  
Strong.  
Gate Works  
EASILY

—AND—  
RAPIDLY.  
PERFECT  
Satisfaction  
—GUARANTEED.

W. B. WEMPLE'S SONS, FULTONVILLE, N. Y.



This Wheel gives high results, and is acknowledged the best, most practical and efficient Turbine made. For Simplicity, Durability, and Tightness of Gate it has no equal.

State requirements and send for Catalogue to  
T. C. ALCOTT & SON,  
MOUNT HOLLY, N. J.

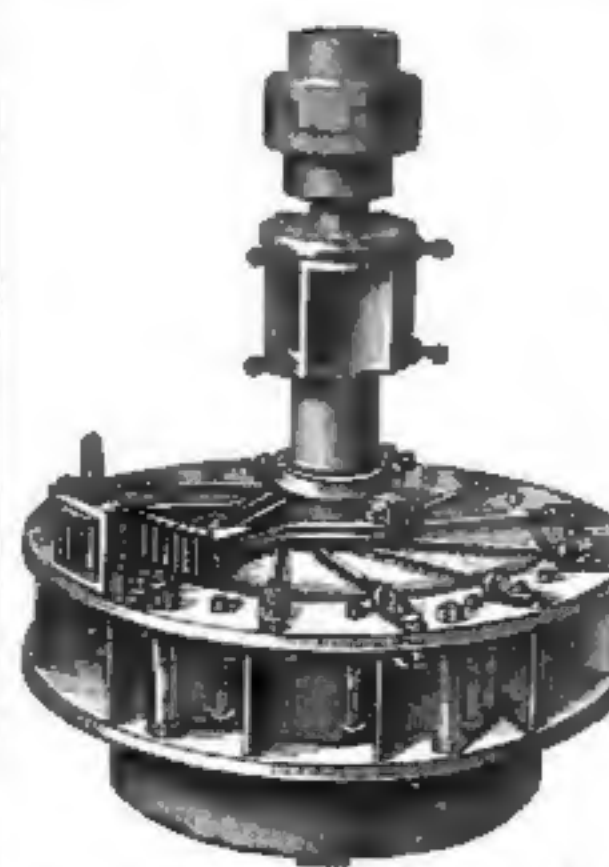
## LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

with improvements, making it the

**MOST PERFECT TURBINE  
NOW IN USE.**

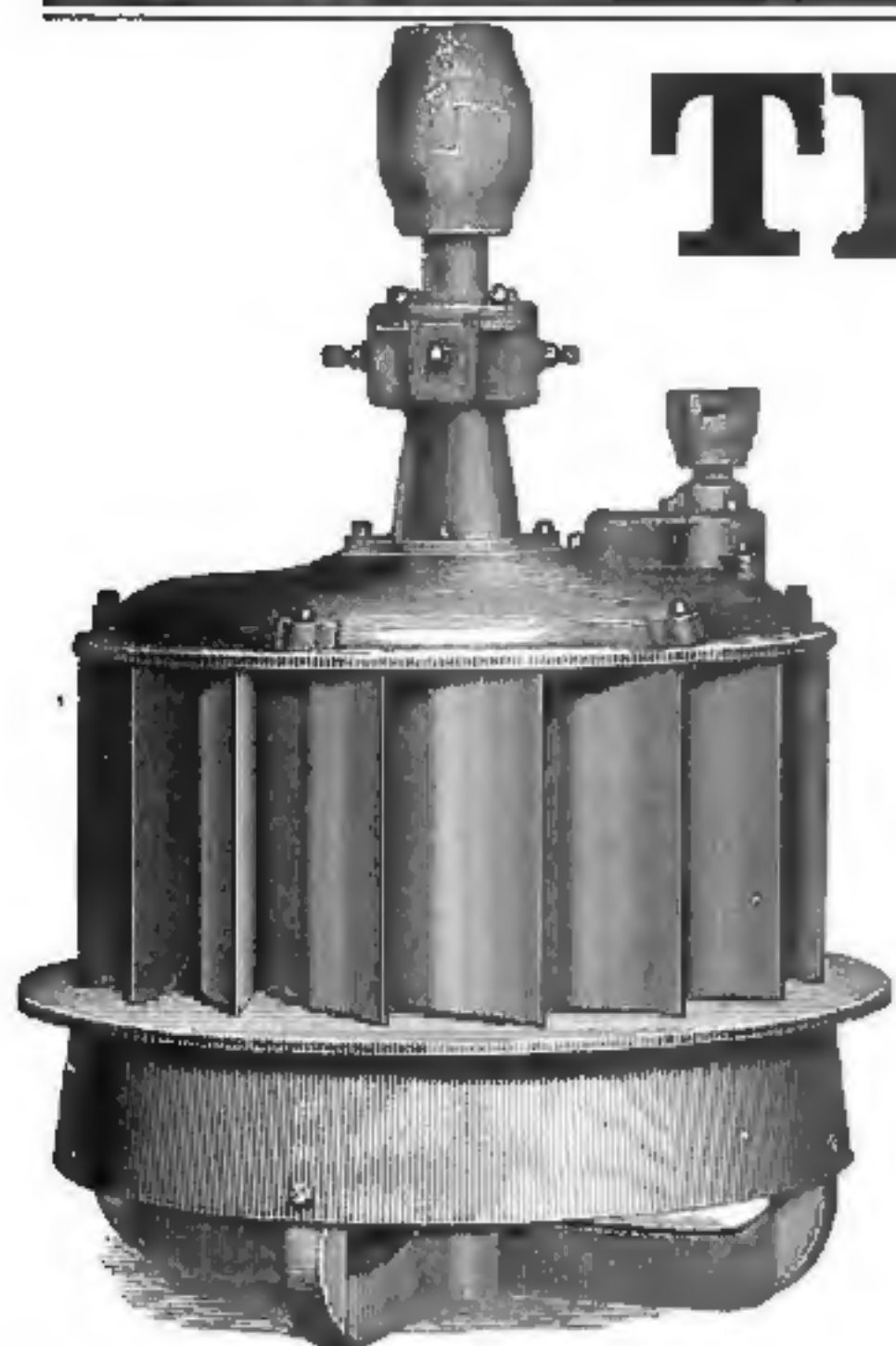


Comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads used in this Country. Our new Illustrated Book sent free to those owning water power.

Those improving water power should not fail to write us for New Prices before buying elsewhere. New Shops and New Machinery are provided for making this wheel. Address

JAMES LEFFEL & CO., 110 LIBERTY STREET, N. Y. CITY.





# THE VICTOR TURBINE

Possesses more than Double the Capacity of other Water Wheels of same diameter, and has produced the Best Results on Record, as Shown in the Following Tests at Holyoke Testing Flume:

| Size Wheel. | Head in Ft. | Horse Power. | Per Cent Useful Effect |
|-------------|-------------|--------------|------------------------|
| 15-inch.    | 18.06       | 30.17        | .8932                  |
| 17 1/2 in.  | 17.96       | 36.35        | .8930                  |
| 20-inch.    | 18.21       | 49.00        | .8532                  |
| 25-inch.    | 17.90       | 68.62        | .8584                  |
| 30-inch.    | 11.65       | 52.54        | .8676                  |

WITH PROPORTIONATELY HIGH EFFICIENCY AT PART-GATE.

Such results, together with its nicely-working gate, and simple, strong and durable construction, should favorably commend it to the attention of ALL discriminating purchasers. These Wheels are of very Superior Workmanship and Finish, and of the Best Material. We also continue to manufacture and sell at very low prices the

## ECLIPSE DOUBLE TURBINE,

So long and favorably known. State your requirements, and send for Catalogue to the

**STILWELL & BIERCE MANUFACTURING CO.,**  
DAYTON, OHIO U. S. A.

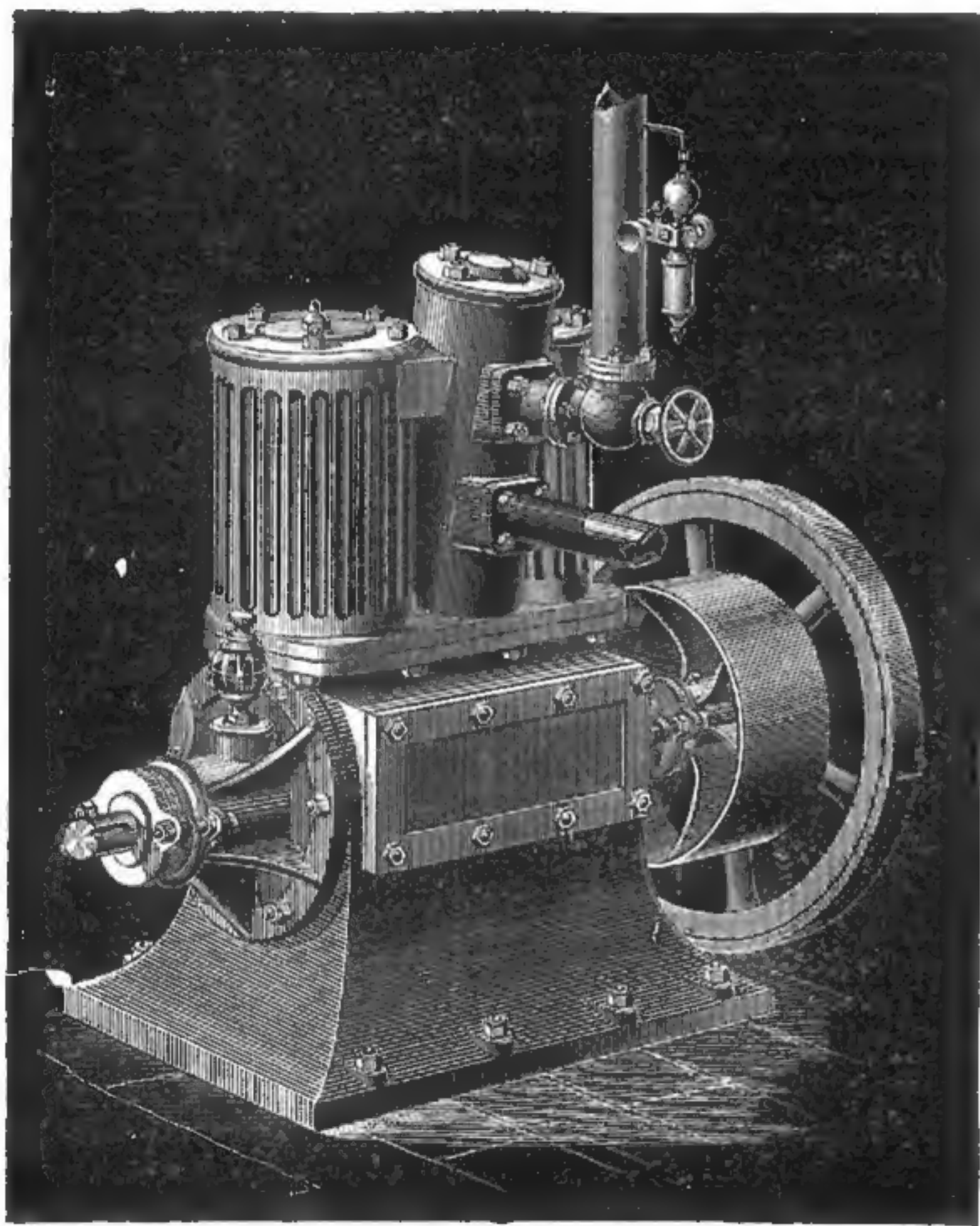
## PORTABLE FORGES

Empire Portable Forge Co.  
Cohoes, N. Y.  
Send for Catalogue.

## The Westinghouse Automatic Engine

REAR VIEW, WITH ONE FLY WHEEL REMOVED.

Over 600 Engines Now in Use. Average Sales, 1600 H. P. Per Month.



The Westinghouse Automatic Engine has no equal in simplicity and close regulation, low cost of maintenance, and general convenience, and in all other essential features of a first-class engine it is guaranteed to have no superior. Occupies the least space, and saves half the cost of foundations. All sizes built strictly to gauge, and parts interchangeable. Every engine tested to full power before leaving the shop.

Our Engines are largely used in Burr and Roller Mills, both as the Sole Power, and as a Relay to Decelerate Water Power. Especially Adapted to Coupling Direct to the Jack-Shafts, or to Special Machinery.

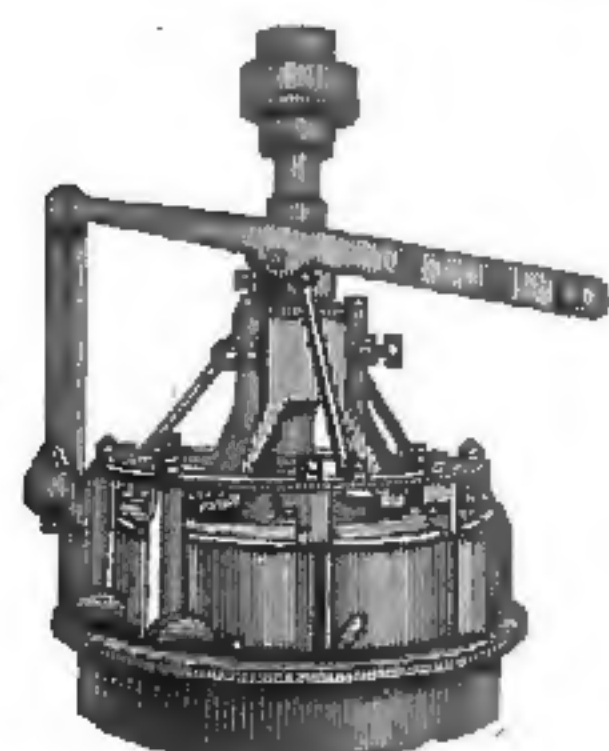
Send for Illustrated Circular and Reference List, and State the Horse Power Required.

OUR PRICES ARE MODERATE.

**THE WESTINGHOUSE MACHINE CO**  
PITTSBURGH, PA.

Address if More Convenient } 94 Liberty Street, New York.  
our Following Branch Offices: } 14 S. Canal Street, Chicago.  
401 Elm Street, Dallas, Texas.

## OBENCHAIN'S IMPROVED Little Giant Turbine Water Wheel.



Is the most Practical and Durable Wheel made, and is the Best Partial Gate Wheel on the market.

Capacity Increased, and Prices Largely Reduced.

We sell Wheels for less money per Horse Power than any other manufacturer.

SEND FOR NEW ILLUSTRATED WHEEL BOOK.

MANUFACTURED BY  
**KNOWLTON & DOLAN,**  
LOGANSPOUT, IND.

## The CUMMER ENGINE

Was awarded the gold medal at the Cincinnati Exposition and a special prize for extraordinary merit, also the highest medal at Louisville for the best Automatic Engine. Send for 150-page catalogue No. 9. Address,

**The Cummer Engine Co., Cleveland, O.**

## POOLE & HUNT'S LEFFEL TURBINE WATER WHEEL

Made of Best Materials, and in the Best Style of Workmanship.

## MACHINE-MOLDED MILL GEARING

From 1 to 20 feet diameter, of any desired face or pitch, moulded by our own Special Machinery.

## SHAFTING, PULLEYS AND HANGERS

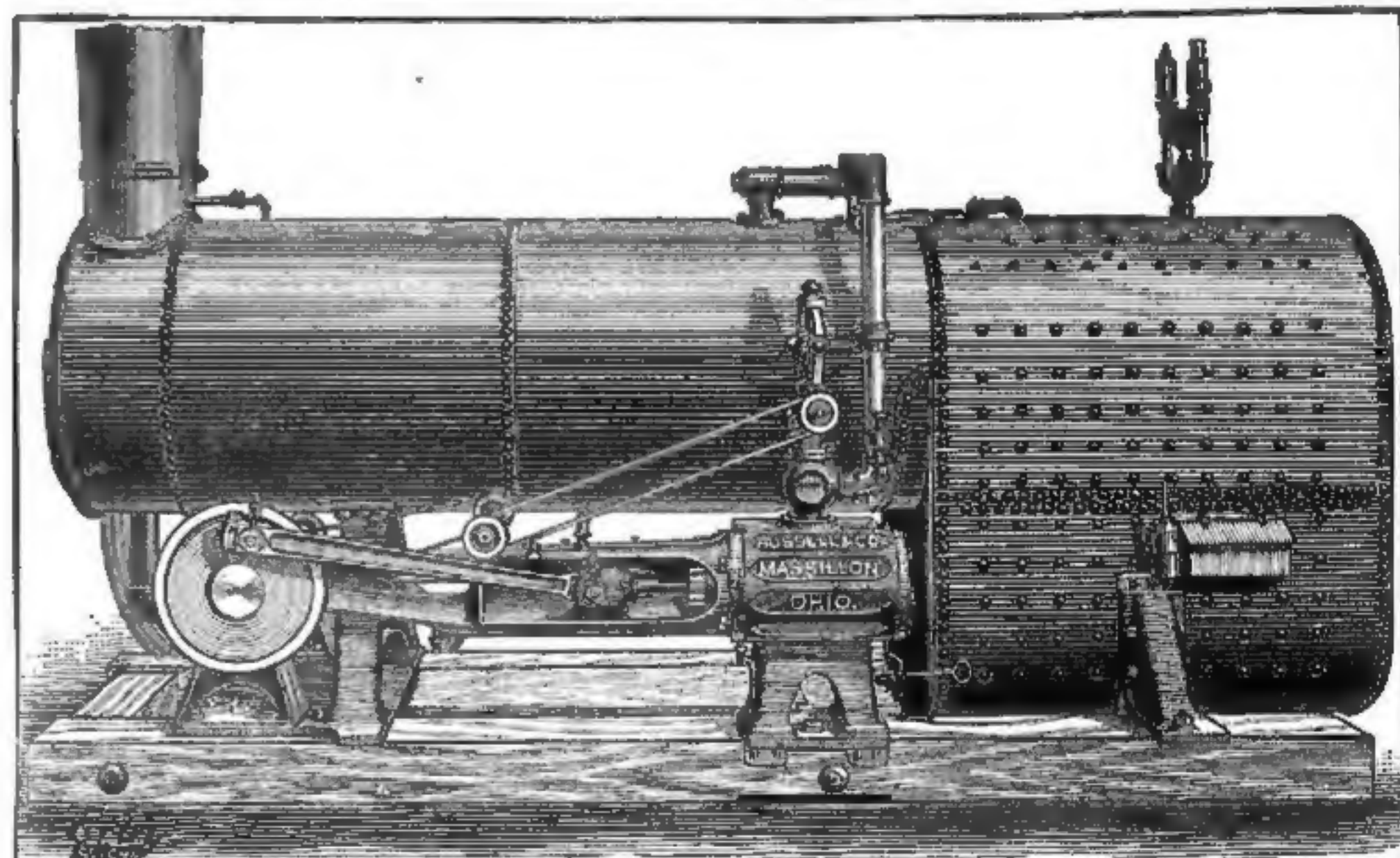
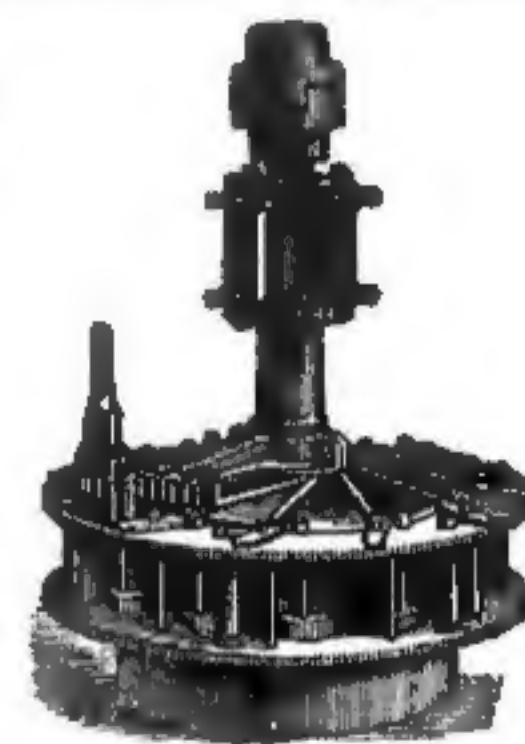
Of the Latest and Most Improved Designs.

Engines, Boilers,

Mixers and General Outfit for Fertilizer Works.

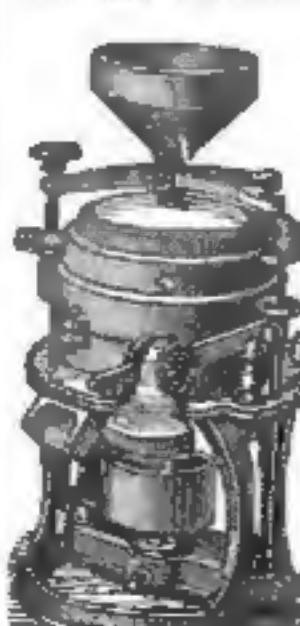
Special Attention given to Heavy Gearing. Shipping Facilities the Best in All Directions.

**POOLE & HUNT, BALTIMORE, MD.**



**THE RUSSELL ENGINES.** Nine Sizes, Six Styles. More in Preparation. Everywhere considered to be the STANDARD. New Illustrated Catalogue sent free on application. Address, naming this paper. **RUSSELL & CO., Massillon, O.**

## Obenchain's Automatic Grinding Mill



Is Self-Regulating, and will continue to grind just as it is set, and the expansion and contraction of the spindle have no effect upon its grinding. It is always in perfect trim when grinding, as it is absolutely a self-trimmer. An obstruction entering this mill, the stones will part just enough to allow it to pass through, and immediately adjust themselves and grind the same as before obstructions entered.

## IT WILL GRIND MIDDINGS

as slow as 10 pounds per hour, or as fast as 600, according to speed and pressure given, and cannot be excelled for grinding wheat or corn. We make four sizes of these mills, 14, 20, 25 and 30 inches, all of the best quality of Old Stock French Burrs, set in solid iron frames. Cut No. 1 represents this mill as made to set upon mill floor. Cut No. 2 is our Hanger Mill, and it is intended that hanger and pulley pass down through the husk floor to be driven from any mill spindle or upright shaft. With these mills we make a specialty of constructing New Process custom and merchant mills at a low figure.

Fig. 1.

ILLUSTRATED PAMPHLET, GIVING FULL DESCRIPTION AND PRICE, SENT ON APPLICATION TO

**KNOWLTON & DOLAN, SOLE MANUFACTURERS, LOGANSPOUT, IND.**







### Notes from the Mills.

Red river boats are busy carrying wheat to market.

A flouring mill is soon to be erected at Sargent, Dakota.

The Welland canal opened for navigation on the 5th of May.

Grandin, Dakota, is to have a 200 barrel flour mill this season.

The Zumbro flouring mill, Rochester, Minn., is to be sold at auction.

Considerable corn in Waldo, Fla., is knee high and growing luxuriantly.

A Farmers' Elevator Company has been organized at Moorhead, Minn.

Flour went up to \$20 a barrel at Rico, Col., during the recent snow blockade.

The Berlin (O.) flour mill was burned May 9. Loss, \$35,000; insurance, \$6,000.

J. E. Hardeman & Son, Fair Play, Ga., have ordered rolls from the Case Mfg. Co., Columbus, Ohio.

The Columbiana flour mills of Cleveland, O., were damaged by fire on May 5. The loss is estimated at \$25,000.

The Case Mfg. Co., Columbus, O., have an order from Feldman & Holdefer, Kanoka, Mo., for rolls, purifiers, etc.

The Case Mfg. Co., Columbus, Ohio, have lately furnished Click & Miller, Dayton, Va., with rolls, purifiers, etc.

Wm. Mack, of Cornwall, Ont., is adding Geo. T. Smith Purifiers and Prinz Dust Collectors to the machinery of his mill.

The Case Mfg. Co., Columbus, O., are furnishing A. Commings, Pleasant Hill, Mo., with breaks, rolls, purifiers, scalpers, etc.

B. Maxwell & Son, Sidney, O., have contracted with E. P. Allis & Co., for six pair of Allis rolls in Gray's noiseless belt frames.

The Whistler flouring mills in Tippecanoe county, Ind., were destroyed by fire. It was the work of an incendiary. Loss, \$9,000.

The Case Mfg. Co., Columbus, Ohio, have just received an order from Morrow Bros., Prospect, Ohio, for an 8-foot improved centrifugal reel.

A Gray's noiseless belt roller mill has recently been supplied to W. Johnson & Co., of Marshall, Mo., by E. P. Allis & Co., of Milwaukee, Wis.

T. O. Kilbourn, of Washington, Minn., has recently bought of E. P. Allis & Co., of Milwaukee, Wis., a noiseless belt drive roller mill.

B. F. Crosset & Co., of Janesville, Wis., have recently purchased from E. P. Allis & Co., of Milwaukee, Wis., a Gray's noiseless belt roller mill.

The crops of South Carolina are said to be in a bad way, and the farmers in certain sections of the State have starvation looking them in the face.

Messrs. J. D. & A. G. McDonald, of Alexandria, Ont., are making a number of improvements in their mill. They are putting in Geo. T. Smith Purifiers and Centrifugal Reels.

Keynes & Wellman, of Logan, O., have recently added a Gray's noiseless belt roller mill to their equipment. It was furnished by the makers, E. P. Allis & Co., of Milwaukee, Wis.

The Albion Milling Co., Albion, Mich., are putting up a complete model roller mill, and will use fourteen pairs of Allis rolls in Gray's noiseless belt frames, all furnished by E. P. Allis & Co.

Playter & McCullough, Walnut, Kan., are putting in a "Little Giant" break machine and scalper combined, and an improved "Case" centrifugal reel, furnished by the Case Mfg. Co., Columbus, Ohio.

W. L. Kidd & Sons, Terre Haute, Ind., have contracted with E. P. Allis & Co., for twelve pairs Allis rolls in Gray's noiseless belt frames, Gray's purifier, etc., to put their mill on the roller system.

F. Gatz, of Tonawanda, N. Y., has the foundation laid for his new grist mill adjoining the grain elevator near the Erie depot. Work on the building will be pushed rapidly forward to completion.

The Le Grand Quarry Co., Quarry, Ia., have contracted with E. P. Allis & Co., for the outfit necessary to remodel their mill to the roller system, and will use eleven pairs of Allis rolls in Gray's noiseless belt frames.

The La Moure *Chronicle* estimates that the total yield of wheat this year in the Red River Valley, estimated upon the increased acreage, will be 35,000,000, or 40,000,000 bushels, as against 16,000,000 or 18,000,000 last year.

A. F. Ordway & Son, Beaver Dam, Wis., have lately ordered a "Little Giant" break machine and scalper, and one pair rolls, with patent automatic feed, from the Case Mfg. Co., Columbus, O., to be shipped to Hannibal, Mo.

The fire losses in the United States and Canada for April are \$10,000,000, against the usual average for April for nine years past, of \$7,500,000. Since January the loss has been \$37,550,000, about \$6,000,000 more than the same four months of 1883.

Lands in the Mojave desert, in southern California, recently purchased by a party of Scottish capitalists, have been put under a successful system of irrigation, and now only want to be "tickled with a hoe" to make them "laugh with a harvest."

"The New York market for red winter wheat has advanced so much lately," said an operator last week, "that there is a possibility of wheat being re-shipped from Liverpool to fill short sales, as freights are low, and at present it could be done at a profit."

Farmers of Knox county, Ind., which ranks high in the production of wheat, threaten to quit growing that cereal, on the ground that direct and indirect taxes are so great that it can not be made to pay, and that farming has ceased to be remunerative, except in rare instances.

The flouring mills of C. Reiss, a few miles north of New Philadelphia, in Columbia county, O., caught fire from a spark of a passing engine a few days ago, and burned to the ground. The mills were situated near Columbiana. Loss, \$25,000 to \$30,000; insured for \$10,000.

About 2,500,000 bus. were sown in Ohio last year for the wheat crop, and late reports estimate that the yield will reach full 34,000,000 bushels. The same report puts the condition of wheat at ■ per cent. Ohio's largest wheat crop was that of 1880, when 48,500,000 bushels were grown.

It is reported that the big milling firm of J. H. Townsend & Co., at Stillwater, Minn., has gone to the wall with liabilities of \$500,000. The failure is attributed to the suspension of D. M. Sabin, the heaviest stock holder, who laid down his bundle almost simultaneously with the Marine Bank, and Ward & Grant, of New York.

W. I. Phillips, grain and flour commission dealer at New York City is reported failed. Liabilities about \$100,000. He has disappeared and it is alleged has obtained money from banks and others on forged warehouse receipts and on margin certificates bearing forged signatures. A receiver has been appointed.

The supports of a warehouse stocked with some 1,500 barrels of flour, situated on the canal bank, and owned by Messrs. A. Watts & Co., of Brantford, gave way on April 22nd wrecking the structure and dumping the contents into the canal. The contents of a hundred barrels were spoiled by the immersion. The total loss was about \$500.

The Case Mfg. Co., Columbus, O., have been awarded the contract of Moses Hartman, Sacraments, Pa., for a double outfit of breaks, rolls, purifiers, scalper, centrifugal reel &c., for a full gradual reduction mill on the "Case" system. Ten sets of rolls will be used in connection with the Case 3-roller break machine which will be used for first and second breaks.

J. A. Noyle's roller mill at Lodi, O., was destroyed by fire sometime ago. Mr. Noyle has purchased a new site, and will build a new mill putting in a full line of breaks, rolls, purifiers, scalpers, &c., furnished by the Case Mfg. Co. In his former mill when it was destroyed, this make of machinery was used, and when he decided to rebuild, he did not hesitate to adopt the line of machinery that had given him such good satisfaction in his old mill.

The case of arson of Bliss & Wood's flour mill against J. B. Colgate, son of J. B. Colgate, the New York banker, was finally dismissed May 11 by the District Court, at Winfield, Kas. This was done to comply with the decision of the Supreme Court of Kansas, to which the case had been appealed, to the effect that the acquittal of Colgate by the jury on the first trial on the charge of arson of the mill was a complete bar to any further prosecution for burning the mill or any of its contents.

Many inquiries about the crops in different parts of Nebraska show that wheat is looking good and growing rapidly. The weather at present is very favorable, and if nothing prevents there will be a much greater yield than in any previous year. The cold weather has been the means of stooling the grain, and with such favorable weather it can not help but grow. Farmers are all busy preparing the ground for corn, which

undoubtedly will be in excess of last year in acreage.

The returns of the Department of Agriculture for May make the wheat prospect nearly as favorable as in April. Then the general average was within 5 per cent of the standard of full condition. The May average is 94. It was 83½ in 1883. Barring the changes of the future, a winter wheat product of about 350,000,000 bushels is indicated. Rye promises fully as well as wheat. The general average for barley is 101. The progress of cotton planting has been delayed everywhere by lower temperature in April. The acreage will be reported on June 1.

The statistical agent, Dakota, writes that while seeding was started earlier this year than usual, unfavorable weather has caused it to drag. Low temperature and frequent heavy rains have prevented work. With the present favorable weather, seeding will be soon completed. The early-sown grain is already up, and looks well, although a little light color. The ground is moist, and a spell of warm weather will bring the plants forward finely. The acreage is as yet incomputable, though present indications point to a decided increase throughout the territory.

The little town of Lamberton, in Redwood County, Minn., on the Winona and St. Peter Railroad is badly in need of a flouring mill, and offers superior inducements to anyone wishing to engage in that business, we are told by the *Farmer's Gazette*. A circle of sixty miles in diameter, of which Lamberton is the center, has no mill. The nearest mill is twenty-eight miles distant at Redwood Falls. The citizens are anxious to have a good mill and will help to start the business. Information concerning the town and its advantages can be obtained by addressing Lewis Chester, F. Immel, or Andrew Anderson, Lamberton, Minnesota.

Says the Des Moines, Iowa, *Register*: "Shaver and Dows have bought the commission building they have been occupying and the lot adjoining to it on West Third street, between Walnut and Court avenue, and will immediately commence the erection of a large building for a cracker factory. They will put in a large establishment, in fact the largest in the state, with a daily capacity of 100 barrels of flour. It will be a big industry and will be quite an addition to Des Moines' already large industries. This is one of the most enterprising firms in the west and will be a most valuable addition to the Capital City. L. M. Condon, of Cedar Rapids, will represent the firm at this place."

The Minnesota agent of the department of agriculture reports seed put in well this year. Plowing is further advanced than usual at this time of year. The result of the experiment of raising winter wheat is not very encouraging. In the prairie districts it is in very bad condition, notwithstanding good coverings of snow all winter. In the few wooded localities where the experiment was made, wheat is excellent. The acreage of spring wheat will be about 3½ per cent. greater than last year, though not up to the ordinary season. Their will be an increase in the acreage of oats, barley, rye and flaxseed, but a decrease in the acreage of corn, owing to difficulty in obtaining reliable seed. The fruit trees wintered well.

The announcement of the failure of Ballard & Ballard, wealthy and extensive flour manufacturers of Louisville, made public May 6, caused a decided flutter in business circles. The ostensible cause of the failure is large losses caused by the recent floods which overflowed the premises occupied by the firm, and ruined valuable machinery. It is said, however, upon what seems the best of authority, that the trouble has been precipitated by unfortunate speculations. The suspension was directly due to a suit brought by the Mercantile National Bank of New York City to recover a debt of \$10,000 due by the firm. The liabilities will aggregate fully \$100,000, and perhaps more, with assets sufficient to pay 80 cents on the dollar. The principal local creditors are: The Western Bank, \$25,000; Falls City Bank, \$75,000; Kentucky National Bank, \$17,000; Mrs. Sarah Ballard, \$10,600. As the parties are men of the highest social and commercial standing and connection, an effort will be made to arrange with creditors so that their business may be resumed.

Professor Peabody, of Illinois, alluding to the fact that a very large proportion of the arable lands once offered for sale by the General Government are absorbed by railroads, settlers or speculators says: "Long before the next thirty years shall have ended, the United States will not have for sale a single acre of land which a farmer could afford to take as a gift, in comparison with Illinois land at fifty dollars an acre." This statement has a great deal of probability in its favor if it is not exact truth. The nomads are now wandering over sections that are only fit for sheep pastures in search of farms and homes, and it

will not be long before a reflux wave will bring the best of them back to the older and better sections that are now so sparsely settled, while Eastern immigrants will have learned that the cheapest land is often the dearest. Let no farmer be deceived by the insane idea of cheap land. That which is nearest markets, railroads, good schools, churches, and is good for diversified farming, is cheaper at \$50 per acre than its opposite is at \$1.25.

The fire at London, Ont., April 30, in Muirhead & Co.'s oatmeal mill, broke out in the third floor among the machinery and burned upwards, the third, fourth and fifth stories being completely gutted and the roof totally destroyed, all of the machinery, with the exception of the stones on the ground floor and the engine and boiler, was ruined and will be almost a complete loss, besides the whole building was flooded with water, and great damage was done to the contents, which comprised almost a car load of oatmeal, between 1,200 and 1,500 bushels of oats, 40 or 50 barrels of flour and other grain, which was thoroughly soaked with water and rendered useless with the exception of some 200 bushels of oats and a few barrels of oatmeal. The damage will be upwards of \$13,000. The building and machinery was owned by Muirhead & Co., but was leased and operated by Mr. Gartley and Mrs. Gray, who hold an insurance of \$1,500 on the stock in the Guardian, while there are risks on the building and machinery amounting to \$15,000, divided as follows: Royal, \$4,000; Commercial Union, \$4,000; Citizens, \$4,000; Royal Canadian, \$3,000.

A correspondent of the St. Thomas *Times* has the following to say regarding Mr. Goodfallow's new flouring mill at Aylmer, Ont. Our readers will remember the burning of Mr. Goodfallow's mill at Aylmer, in September last. The smoke had scarcely disappeared from the ruins before Mr. Goodfallow was calculating the chances as to whether a mill of larger proportion than the old one, with all the modern improvements, would prove a paying investment. He decided to build on the old site at once, and has erected and almost in operation what is said to be the finest roller mill in Canada. The plan of the mill was prepared by the Noye Manufacturing Co., of Buffalo, N. Y., and it has a capacity of 150 barrels per day. The contract price for the building was \$8,000. The Noye Manufacturing Company, of Buffalo, have the contract for supplying and putting in running order the machinery, at a cost of \$12,000, and are fulfilling this contract to the entire satisfaction of Mr. Goodfallow. The mill is built of white brick, and is 40x40 and five stories high. Its total height from low water mark to the peak is 80 feet. It is surmounted with a mansard roof covered with metal. There is also a ventilator, flagstaff, etc. In an addition to the main building, 20x30, is placed the engine and boiler of 65 and 75 horse power respectively. The Corliss engine was manufactured by Inglis & Hunter, of Toronto. The boiler is made of steel and was manufactured by the same firm. The mill can be run by water power as well as by steam. The basement is 13 feet in the clear and contains two Little Giant water wheels, 24 and 33 inches, a milling separator and a brush smutter, both manufactured by the Geo. T. Smith Manufacturing Co., of Stratford; a cockle machine, made by Kurth, of Milwaukee; a magnet machine, made by Howes & Ewell, of Silver Creek, N. Y. The latter machine is intended to pick out any bits of wire, iron, or other metal that may have found its way into the wheat, and thus prevent damage to the machinery. The second story is also 13 feet in the clear, and contains ten pairs of Stevens' rollers, made by the Noye Mfg. Co., two run of stones, one for wheat and the other for chopping purposes. A flour packer for barrels, bags and sacks, made by the Smith Mfg. Co.; a grain hopper, capable of holding 60 bushels; a set of scales for weighing grain as it is unloaded from the farmers' wagons, and a neat and commodious office fill up this part of the building. Passing into the third story we find a 4-reel improved bolting chest, 18 feet long, made by Noye & Co.; a 5-reel scalping chest and a Smith double purifier, No. 2 and 3. Here also is a wheat bin of 500 bushels capacity, and a flour bin capable of holding 125 barrels. In the fourth story we find a custom bolt, a 2-reel chest running in connection with the one in the lower story, a No. 0 Smith purifier, a No. 1 Smith centrifugal reel and a Smith bran duster. The fifth story has a balloon or dusting room of 365 yards surface. In this upper story is to be found the heads for all the shafting, elevators, spouts, etc., in connection with the mill. There are 25 different sets of elevators, nearly all running from the lower to the upper story, and the neatness and precision with which they have been erected surpasses all comment. Every spout and elevator is in its proper place, and arranged to be as handy as possible for the mill operatives and yet not be in their way.





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GRAY'S PATENT

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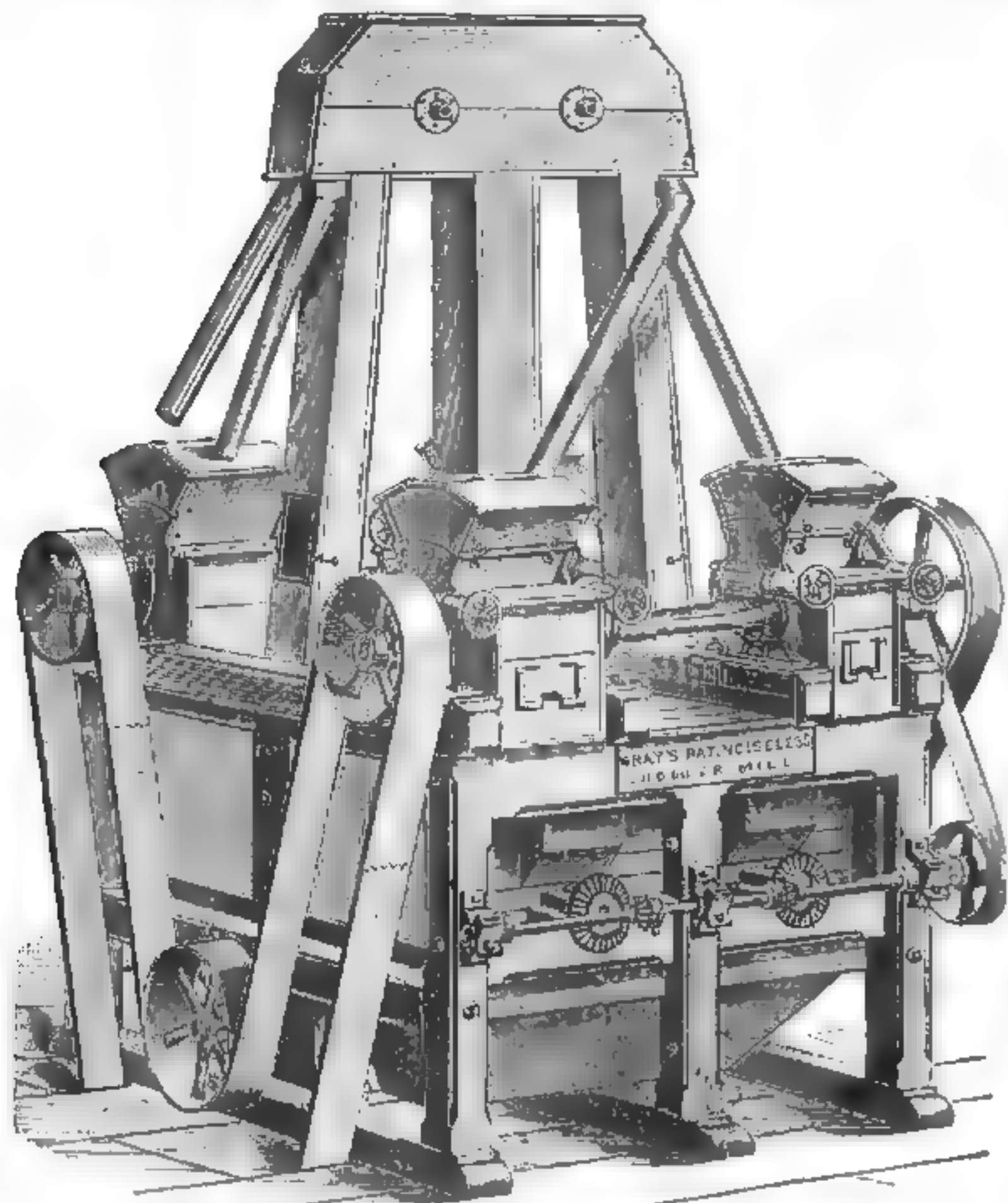
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Eight inches long, 2 1/2 inches wide, 1 1/2 inches thick. Received the highest and only Award given to Polishers at the Millers' Exhibition, Cincinnati, Ohio, June, 1880.

For facing down high places on the burr, this tool has no equal, and can be done much better and in one-sixth the time than with the mill pick. It is much larger, cuts better, can be used on either face or furrow; can be used until the corundum is entirely worn out on one side and then turned on the other side. Has over four times the amount of corundum and when the corundum is worn out can be replaced in the handle at a small cost. Sent by express, \$3.50. Satisfaction guaranteed, or money refunded. Address

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GENTLEMEN: We have now been running your double Roller Mill about 30 days, and it works to our entire satisfaction. The adjusting device by which both ends of the rolls are adjusted at the same time is a decided improvement over any rolls we have seen, as it guarantees uniform work, and the journals being always in line, keeps them running cool. Our bran is well cleaned as you will see by sample sent you. Yours truly, LEVAN & SON.

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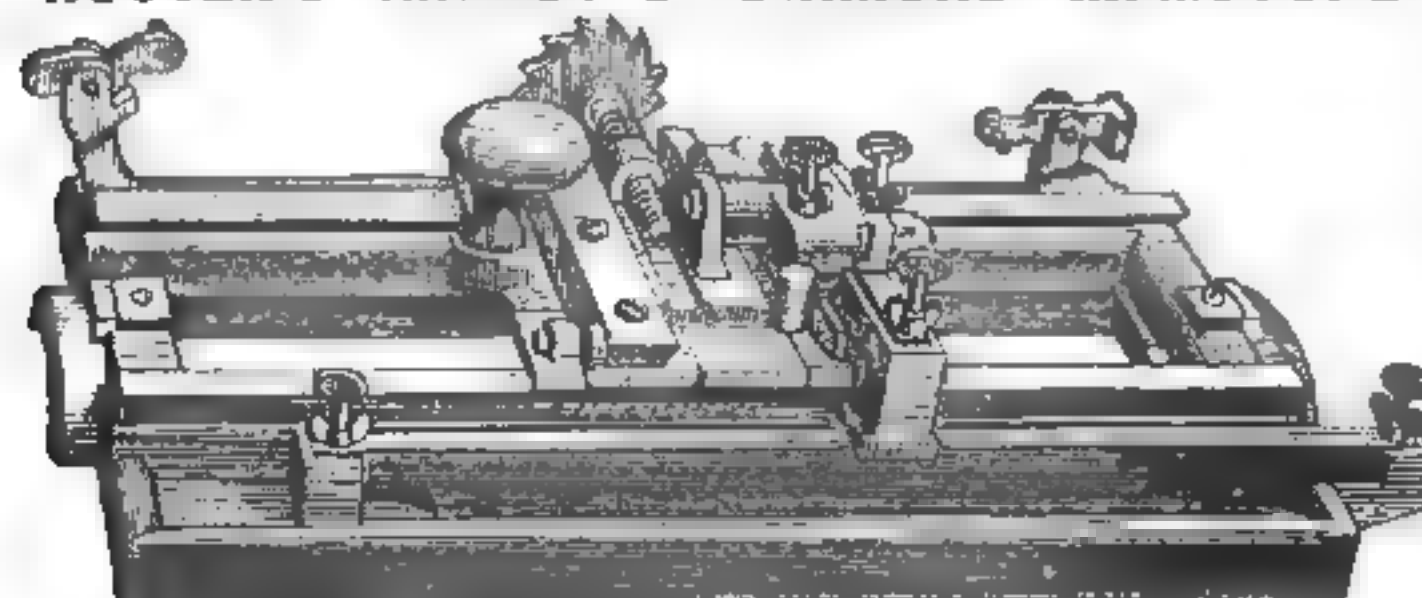
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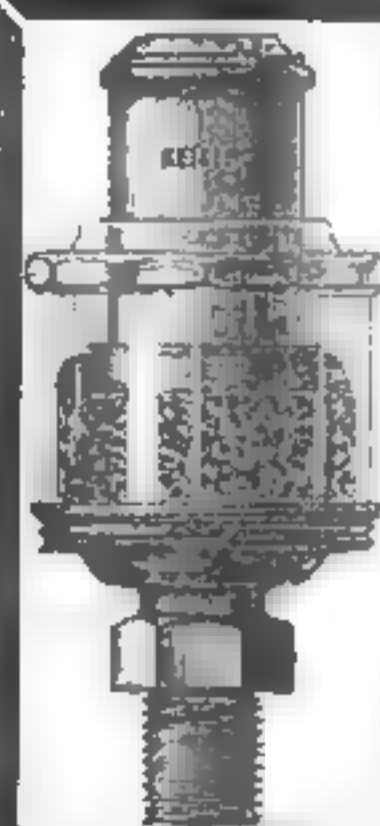
ADAPTED TO ALL KINDS OF DRESSING.

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| No. 1, to face and crack  | \$35.00 |
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Will do as good work, and is more easily adjusted than any other machine. Sent on 30 days' trial. Address for circulars, containing full information.



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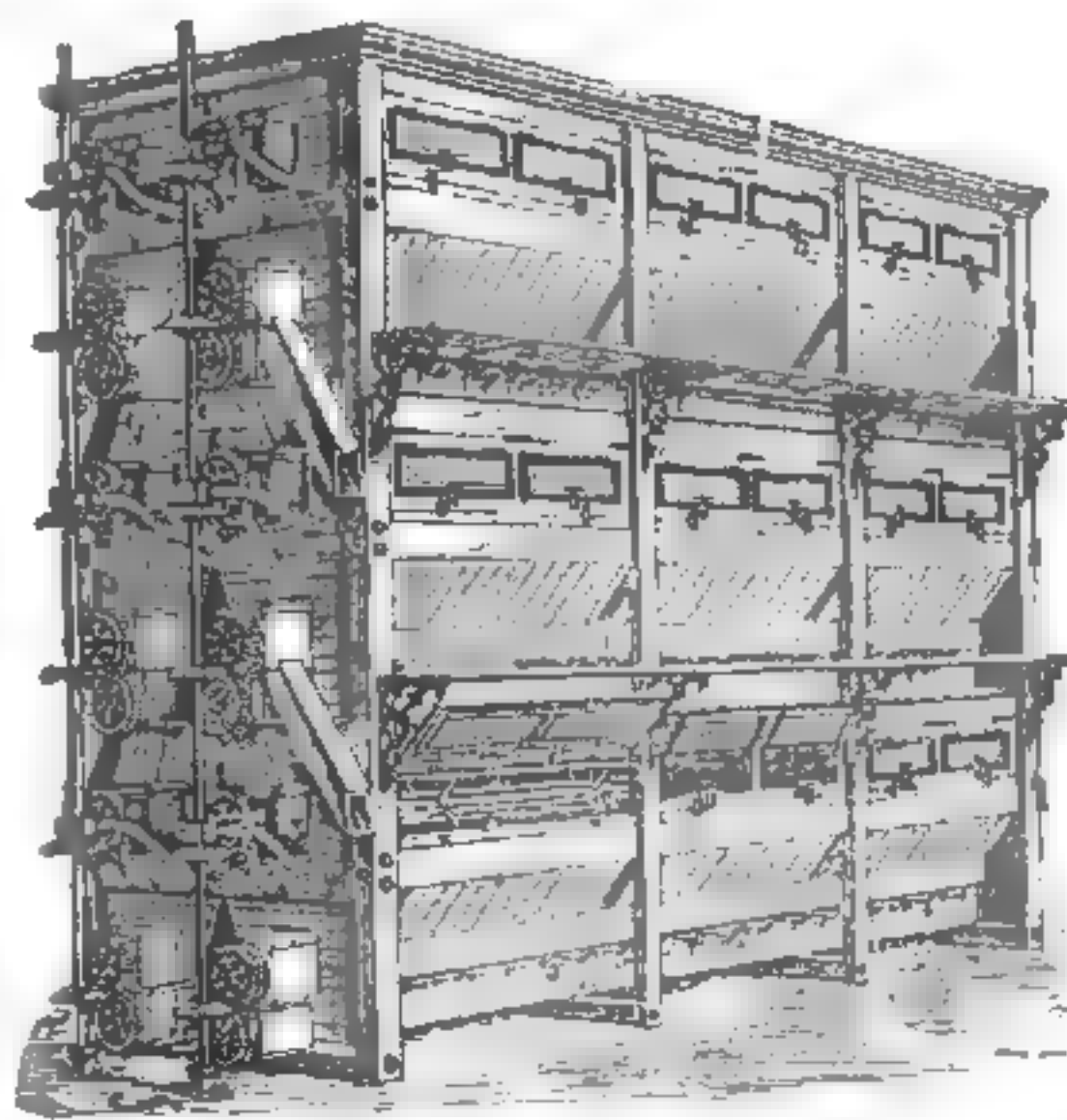
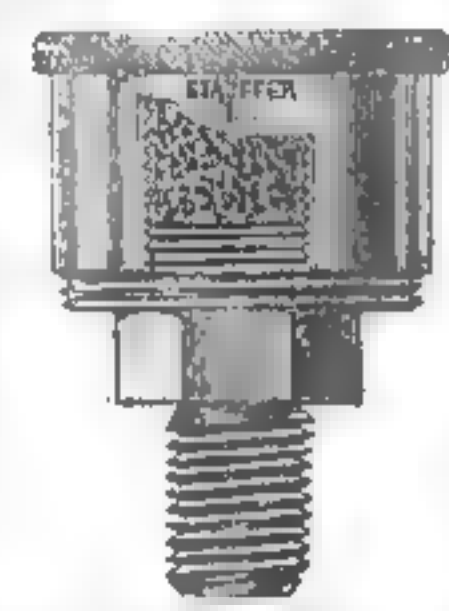
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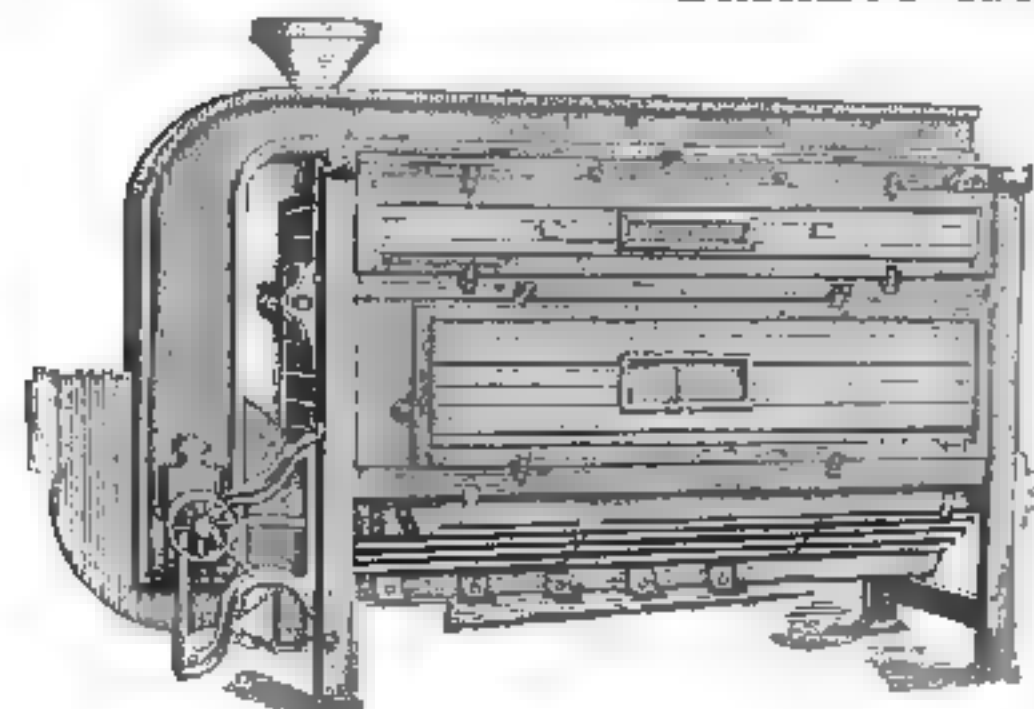
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ADAPTED to all styles of milling, high or low grinding, as fine or coarse middlings can be treated separately on one machine. Economy in space, as the machine is a double one. A perfect cloth-cleaning device. No brushing or wearing of cloth. Licensed Under All Conflicting Patents. We are the Agents for the E. P. Allis Roller Mills, and Mill Builders and Contractors. We are at all times prepared to furnish plans and estimates, and to contract for the erection of first-class mills of any desired capacity from 50 to 500 barrels. Parties contemplating Roller Mills or remodeling old mills will find it to their interest to write for Prices and Terms. Wolf & Hamaker's Latest Improved Bolting Chest. Also Mill Furnishings of Every Description.

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ON VIEW AT PERMANENT EXHIBITION OF MILL MACHINERY, 36 BROADWAY, NEWYORK.







### INCREASED GRAIN TARIFFS IN GERMANY.

THE present grain tariffs are five per cent of the price on wheat, six per cent on rye and barley, and seven per cent on oats, says the *Austrian-Hungarian Mueller Zeitung*. Now the agricultural population of Bavaria has recently petitioned the government to increase the tariff, and the manner in which public opinion is made susceptible for the proposed increase, is the very counterpart of the efficient and successful methods used towards that end on various other occasions. First petitions upon petitions are sent to the Parliament; then some good friend takes care that the question is publicly discussed in a well attended mass meeting and thus popular attention is directed to it. Shortly afterwards agricultural societies and meetings take the hint, one cry for protection follows the other in quicker recurring succession, and before we are aware of it, even the most preposterous idea appears quite reasonable and plausible to a large number of people, who in this case, sympathize with the down-trodden agricultural population and echo the cry of increased grain tariffs. Fortunately there is a strong element among the voting population who cannot be caught by such artifices, and the present agitation about grain tariffs will be doomed to oblivion like many other similar project of the past few years.

### NOTES.

The steam roller mill in Arad, Austria, owned by Messrs. Neuman Bros., which burned down last year, has been rebuilt and set to work during the last week in April.

Between August 17 and August 24, the city of Berlin will witness an exhibition of the products of bakers and confectioners, together with all machinery used in the trade.

Subscriptions amounting to more than 17 times the desired sum have been offered in response to the Russian government's call for a loan of £15,000,000 to be used in the construction of railways.

Russia, Germany and Austria are discussing common measures looking to the supervision of the production and sale of dangerous explosives. England and France have not been invited to participate.

The granaries of Vienna have declared a dividend of 9.7 per cent, for the past year after liberal deductions and allowances for everything. This has been the most successful year since the warehouses have been established.

The latest estimate of Mr. Licht, the German statistician, of the probable total yield of the beet-sugar crop of Europe for 1883-4 is 2,305,000 tons, which is 65,000 in excess of the estimate in his circular of the 9th of February.

Russia projects an export tariff on everything in the form of merchandise which leaves the empire. Of course the project meets with the most powerful opposition from all producers and exporters, and it is doubted whether it will be made a law.

The estimated cost of rebuilding the Saal mill in Bernburg, Germany, which was totally destroyed by fire a couple of years ago, is about \$175,000, of these \$70,000 are set aside for the buildings, \$10,000 for the elevator and the rest for machinery.

A company has been formed in Italy for the purpose of experimenting on tea cultivation in the island of Sicily. Hopes are entertained that tea can be raised profitably and can be made an important article of export from the island in the near future.

Trieste now bids fair to enjoy the commercial prestige of the Queen of the Adriatic in her palmy days. The new port, that has been in course of construction for fifteen years, is just completed after an expenditure of something like \$7,500,000. This fact, taken in connection with the commercial value of the Arlberg tunnel, recently opened, will give exceptional facilities not merely to German and Austrian, but to European trade generally.

The last official report of a prominent industrial society in Switzerland mentions the fact that now is the time to gather in the harvest of foreign inventions, as there is little doubt that patent laws will be passed in Switzerland before long. In accordance with these suggestions a dozen movements and half a dozen finished watches have been ordered by the society from the different American manufactories, to be handed around among the members, and the weekly paper issued by the patent department has also been subscribed for.

The government of India, which controls and operates the greater part of the railway system of that country, has determined to adopt iron freight cars, and it is advertising for contracts to furnish 1,000 cars made of that material. The specifications published show that the American freight car design has directly influenced the plans for the new Indian goods wagons, as they are called. They will be open cars twenty-five feet long, and will be carried by two trucks. The whole of the cars will be of iron—trucks, frames, and upper work. All parts must be made interchangeable, and to standard sizes.

The struggle between the city of Manchester to secure, at an expense of £6,000,000 sterling a ship canal from Liverpool to Manchester, and the city of Liverpool to prevent the construction entered upon its sixth week before the committee of the house of lords last week. The expenses of the contest have so far amounted to \$1,000,000 in lawyers' fees alone. The people of Liverpool secured the testimony of Capt. James B. Eads as an expert, and his statements in opposition to the project have been so convincing that they are looked upon by many as being invaluable and likely to lead to the defeat of the Manchester scheme.

A correspondent of the *Journal de la Meunerie* is of opinion that the reason why roller mills are so much more used in other countries than in France, is that no one but a Frenchman can dress millstones properly. In the course of extensive travels in Europe, he declares that he did not meet with one good dresser outside of France. This, however, does not quite agree with the decadence of the French flour trade itself, as illustrated by the following figures, which are the official returns of the imports and exports in the first three months of this year:

|                | Imports.<br>Qnits. | Exports.<br>Qnits. |
|----------------|--------------------|--------------------|
| 1884 . . . . . | 89,659             | 19,301             |
| 1883 . . . . . | 99,142             | 26,906             |
| 1882 . . . . . | 48,457             | 18,378             |

Ten years ago the yearly export was 2,500,000 qnits.

Stone milling is losing ground visibly in Great Britain, says a correspondent of the *Millers' Gazette*. There is scarcely a miller now in the United Kingdom who is not racking his brain in trying to solve the problem of how he can best re-arrange his mill on the gradual reduction principle. And well he may; for those of his brethren who have discarded the millstone have not yet met the doom that was predicted for them. On the contrary, they are still alive, and most of them are increasing their output. This problem of re-arranging mills has been solved in a different manner by almost every miller. Some have taken out their old machinery entirely and put a full plant of new machinery in its place; others have gone so far as to build a new mill altogether; very many have made use of the existing machinery and complemented it by replacing the stones by other reduction machines. Some have incorporated their stones in a partial gradual reduction system, either by using them for one or two breaks, or by using them for the reduction of the purer classes of middlings; and there is scarcely a miller among the rest who has not at least added a couple of roller mills for reducing some of his middlings. Mills worked on the old low-grinding system, that is, without the assistance of any rolls and purifiers whatever, are now an exception, and it may be safely said that there are but few millers in the United Kingdom who still believe that low-grinding is more advantageous than gradual reduction.

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**IN THE WORLD.**  
THE POSITIVE ADJUSTMENT AND AUTOMATIC MIDDINGS MILL  
Is Strictly Self-Protecting  
The Best Adjustment in the World.  
And the only  
**Perfect Granulator**  
Grinds Cool, Self-Oiling, Great Saving of Power.  
Simplicity and Durability Combined.

Satisfaction Guaranteed on all our Goods. Send for Descriptive Circular, giving Prices, Sizes, Terms, etc.  
**BREWSTER BROS. & CO. Unadilla, N. Y.**

### WIRE BOLTING CLOTH—STEEL, BRASS AND TINNED

ESTABLISHED 1844.  
Exclusive Manufacturers of the  
**"ACME"**  
STEEL TEMPERED  
**Battery & Bolting Wire Cloth.**  
Also Manufacturers of  
Bran Duster Cloth, Plated Wire Mill Screen Cloth  
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A full line constantly on hand. Send for samples and price lists.  
**Brooklyn Wire Cloth Works, NO. 107, JOHN STREET, New York.**

### THE RIDER ANTI-LOW GRADE WHEAT BREAK AND THE MILLER ROLLER MILLS.

We have had unparalleled success with our mills, and are putting in the Rider System, and changing some of the most Celebrated Mills. The leading mills of Ohio, Messrs. Hardesty Bros., Canal Dover, Ohio, are using the Rider Break and System, and cannot speak in Praises Too High for both Break and System. We can make small mills equal to large ones. Write us for Rock Bottom Prices and Undoubted Reference of parties using our Breaks and Rolls. By adopting our system you can save money, also save from 8 to 10 per cent low grade over other systems, and keep both quality and yield up to the best.

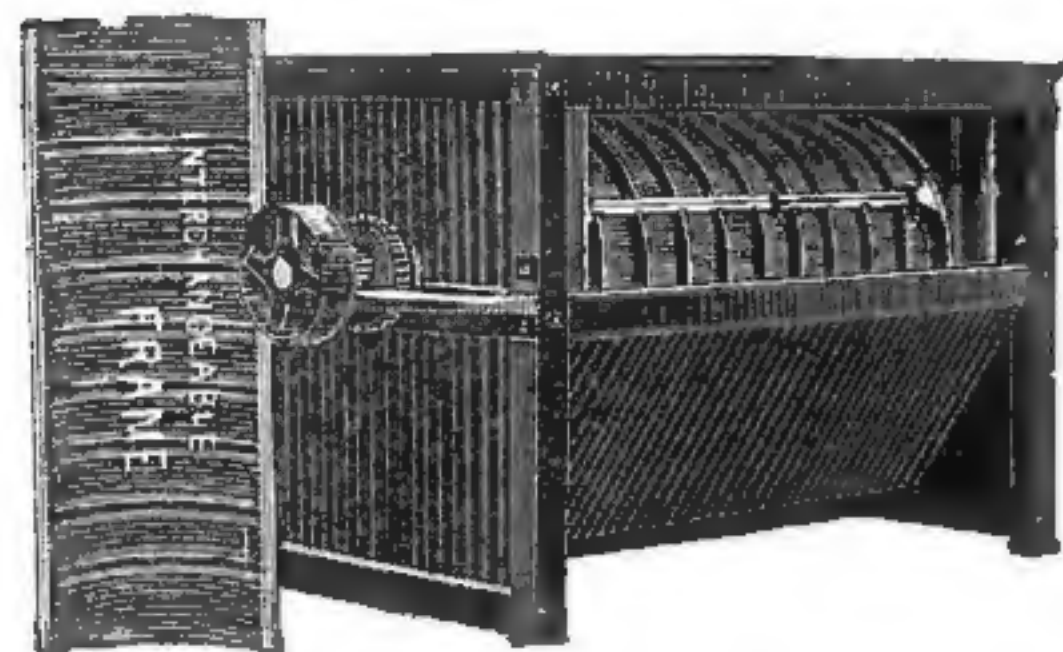
**THE MILLER CO., CANTON, O.**



# EXCELSIOR CENTRIFUGAL FLOUR BOLTS

FRANK ANDREE'S PATENTS, awarded Blue Ribbon and a Diploma of Merit at St. Louis Fair, Oct. 5, 1882.

**Crowned With Success!**



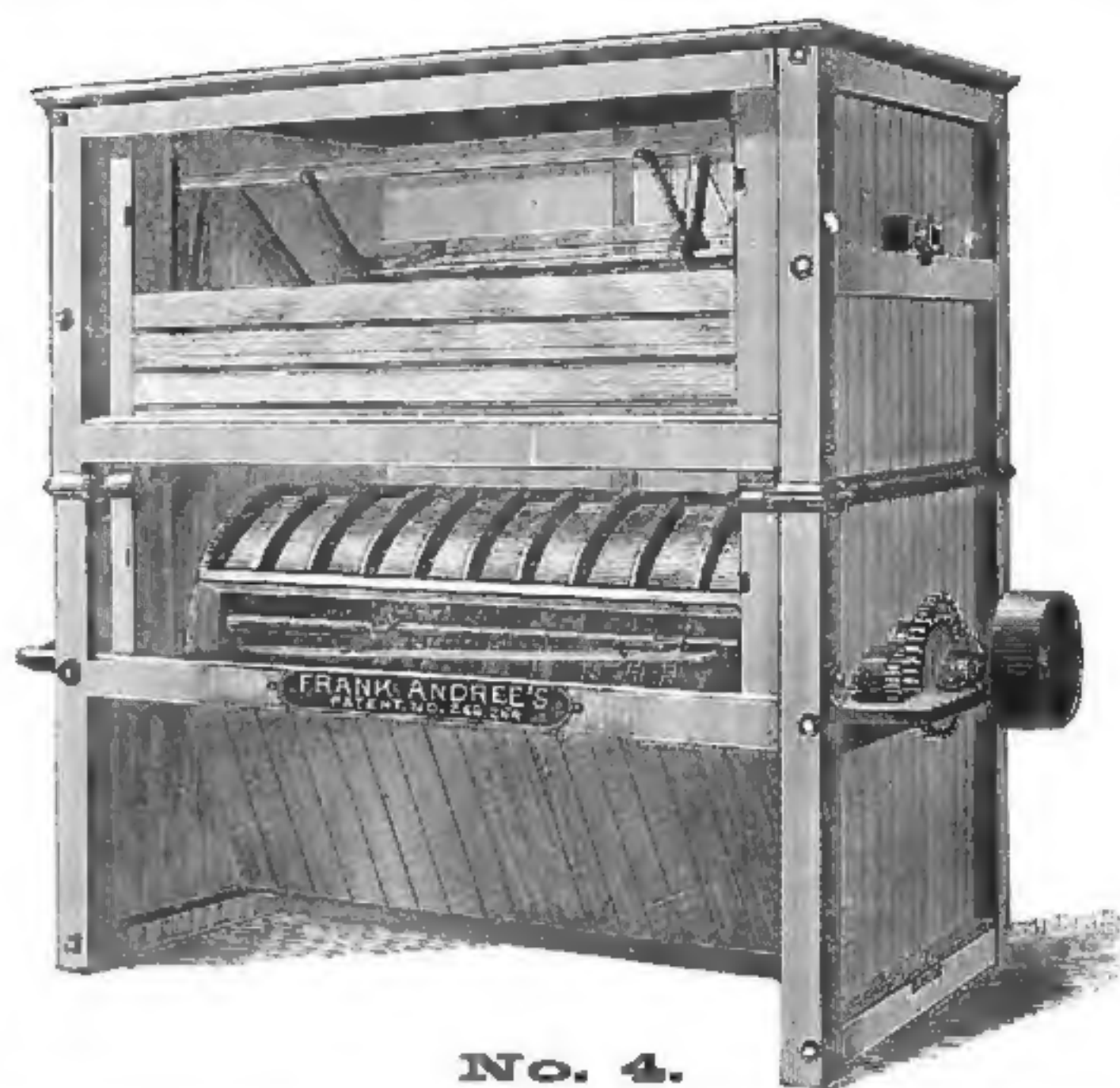
Our No. 1 Stationary Double Reel!  
Our No. 2 Stationary Single Reel!  
Our No. 3 Rotary Single Reel!  
Our No. 4 Rotary Double Reel!  
Our Interchangeable Bolting Frames!

The only complete system of Centrifugal Flour Bolting Reels in America. The merits of simplicity, of quality, of quantity, of durability, of light running, and the entire practicability of our Reels has been demonstrated publicly and privately beyond dispute.

REFERENCE GIVEN! SATISFACTION GUARANTEED!

Send For Catalogue and Price List.

**KASTLER BROS.,** Sole Agents of United States, **CHICAGO, ILL.**  
OFFICE: No. 330 Division Street,



No. 4.

## ODELL ROLLER MILLS ARE MADE ONLY BY STILWELL & BIERCE MFG. CO., DAYTON, O.

### GREAT TRIUMPH IN INVENTION

The Simplicity so long sought after in Roller Mills attained at last.

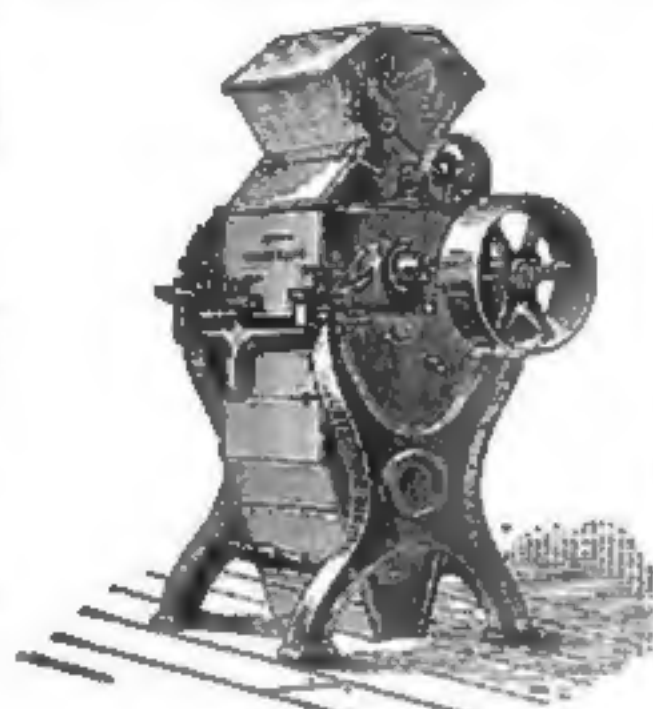
ONE, TWO, OR FOUR BREAKS IN A SINGLE FRAME

SIZES OF ROLLS 9x18 and 7x14 INCHES.

NO CROSS BELTS. NO FRICTION. NO LOSS OF POWER.

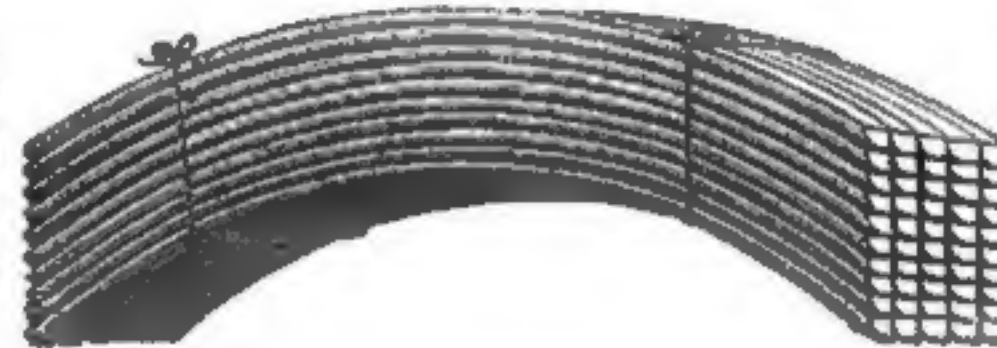
Reduction Rolls, Bolting Cloth, Purifiers, Middlings Mills and Bolting Chests. General Mill Furnishing Supplies.

**W. H. BARBER & CO.,** SOLE MANUFACTURERS, ALLENTOWN, PA.



### HEAD LININGS AND COILED BARREL HOOPS.

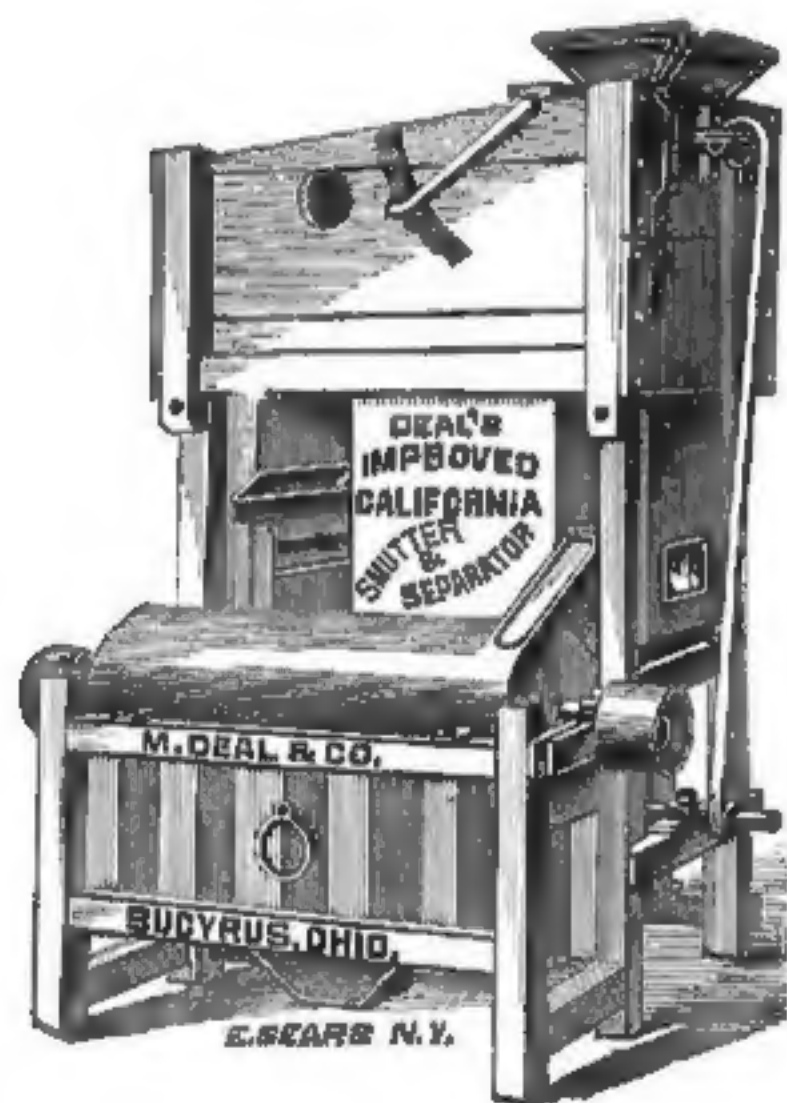
Our Celebrated Patent Head Linings are straight rounded on their upper edge nail on barrel. They will freely through the square are packed. We can furnish from twelve to seventy-two GOOD Head Lining can



Round Edge Bent Barrel grained from end to end, and crimped or bent ready to not mold, as the air circulates bundles of 250 in which they them any desired length, inches, and as cheap as any be sold.

CAN FILL ALL ORDERS AT SIGHT.

**REED & SILL COOPERAGE CO.,**  
DETROIT, MICHIGAN.



### CALIFORNIA! DEAL'S CALIFORNIA MAGNETIC BRUSH SMUTTER AND SEPARATOR COMBINED

Warranted The Very Best In America.

The purchaser being the judge after 60 or 90 days' trial. We manufacture a complete line of Grain Cleaning Machinery, and guarantee every machine to give entire satisfaction or no pay. Send for circulars, it will pay you.

**M. DEAL & CO.,**  
Sole Owners and Manufacturers,  
BUGYRUS, OHIO, U. S. A.

**GOVERNORS** { For Water Wheels } Cohoes Iron Foundry & Mch. Co.  
Send for Catalogue. Cohoes, N. Y.

### MUNSON BROS.

MANUFACTURERS OF

Munson's Celebrated Portable Mills,  
FOR WHEAT, MIDDINGS, CORN, FEED, Etc.

Millstones, Hangings, Bolting Chests, Shafting,  
Gearing, Pulleys, Hangers, Etc.

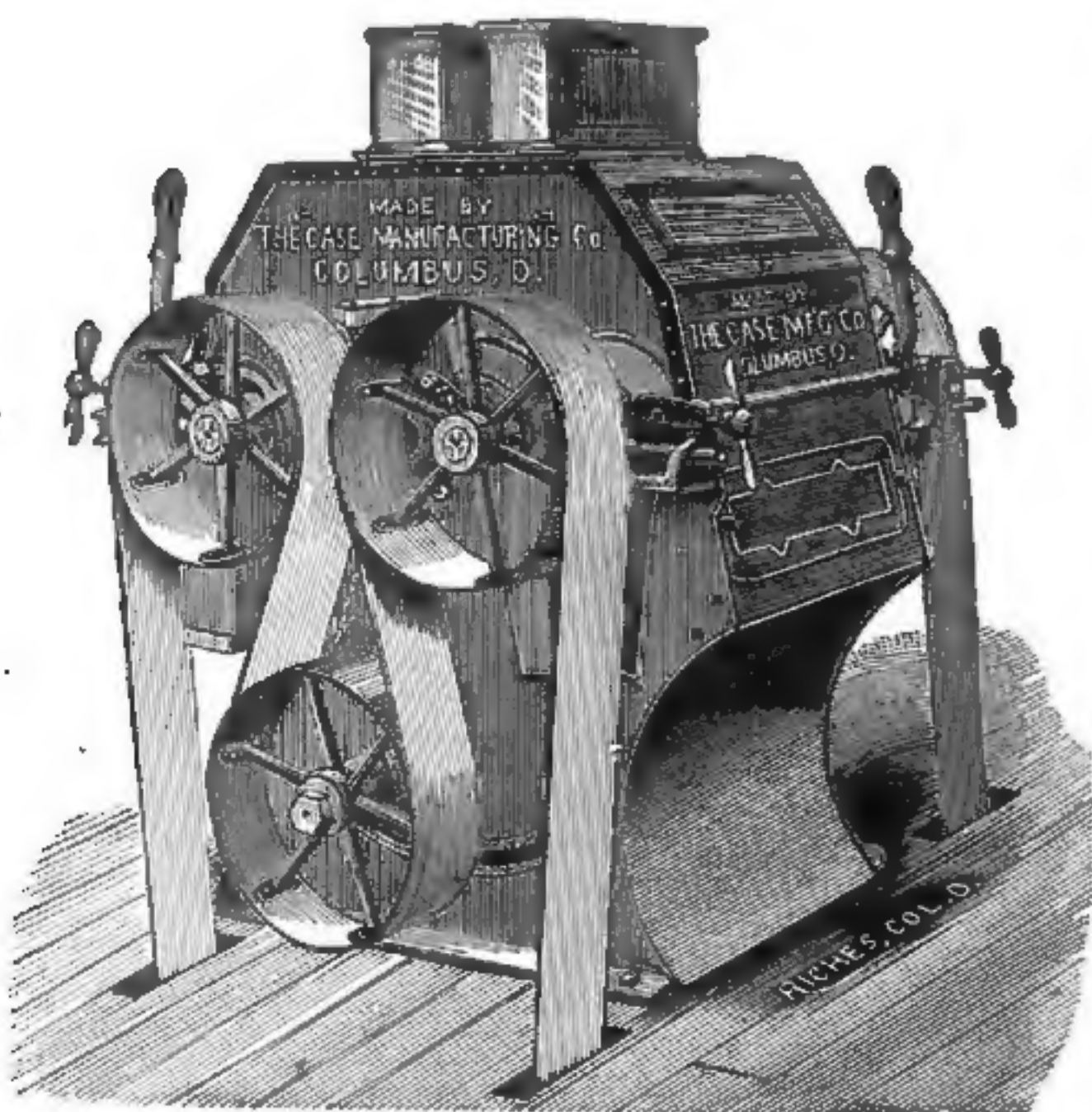
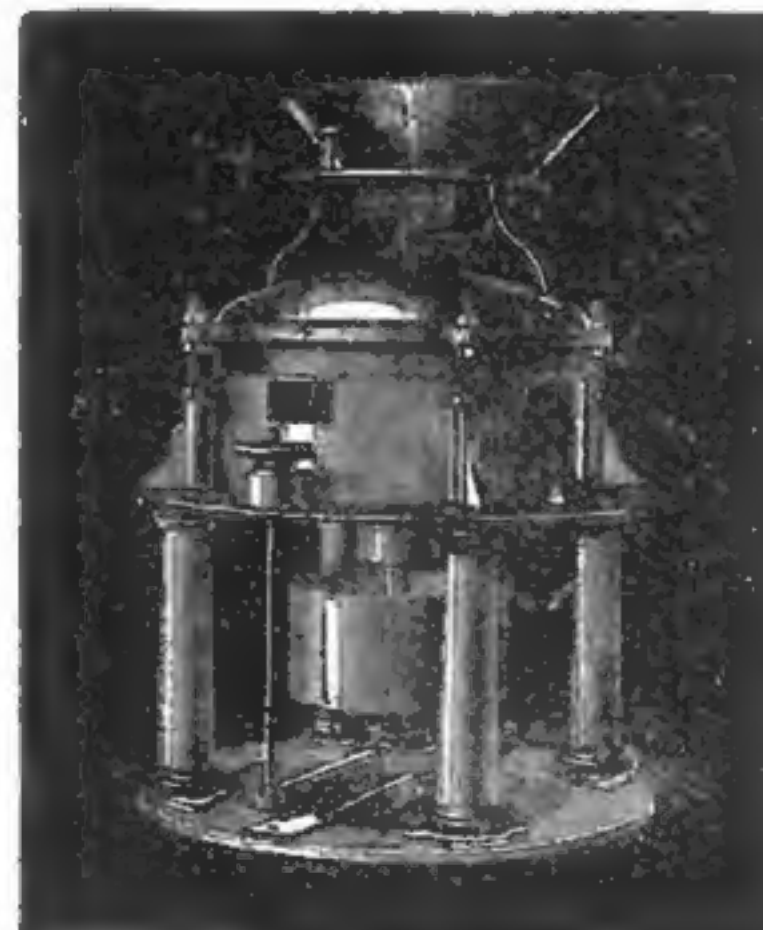
DEALERS IN EVERY KIND OF

**MILLING MACHINERY,**  
ENGINES AND BOILERS, WATER WHEELS, Etc.

**Genuine Dufour Bolting Cloth.**

Specifications, Estimates and Plans furnished.

Address, **MUNSON BROS.**  
P. O. BOX, 380. UTICA, N. Y.



"BISMARCK."

The millers of the country will do well to confer with us, if they think of changes. If full Gradual Reduction is wanted, we can give you the VERY BEST. If only a "Half High" or Partial System is wanted we have the best plan for the least money, something that will interest millers to learn of. Address,

**THE CASE MFG. CO., COLUMBUS, O.**

Wm. E. Catlin & Co., Agts., 57 S. Canal Street  
Chicago, Ill.



HAS BEEN AWARDED  
FIRST AND ONLY PREMIUM  
AT THE  
Millers' International Exhibition.



Office of THE MILLING WORLD.  
Buffalo, N. Y., May 14, 1884.

It would appear almost useless to attempt to follow the course of the wheat market during the past week. Prices have been up and down yet are without stability. At this writing, May, June and July wheat show a decline of  $2\frac{1}{4}$ ¢,  $2\frac{1}{2}$ ¢ and  $2$ ¢ respectively. There is to be reported a slack export demand and certainly home conditions do not warrant any advance in values. The market is, in a word, dull and weak. It is not improbable that the declines quoted may be recovered, but confidence that such recovery will be permanent is by no means strong.

The flour markets on the contrary manifest a very considerable degree of strength and seem inclined to act independently of wheat for the time being; or rather, any decline in wheat fails to influence flour, while any advance in wheat is quickly responded to. The news from the West is still bullish, in that it serves to show that the millers are finding greater difficulty in getting good wheat to grind. There is no quotable change in prices, but the low grades are still scarce and tending upward. Rye flour is quiet and steady. Corn goods are in moderate demand and steady. Mill feed is quiet.

#### FOREIGN EXCHANGE.

Dull and unchanged. Commercial bills continue scarce. The posted rates are 4.88 for 60 days, and 4.90 for demand. The actual rates were: At sixty day's sight, 4.87@4.87 $\frac{1}{2}$ ; demand, 4.88 $\frac{1}{2}$ @4.89; cables, 4.89 $\frac{1}{2}$ @4.89 $\frac{1}{2}$ ; commercial, 4.85 $\frac{1}{2}$ @4.85 $\frac{1}{2}$ . Continental exchange quiet; francs, 5.71 $\frac{1}{2}$ @5.16 $\frac{1}{2}$ , and 5.14 $\frac{1}{2}$ @5.13 $\frac{1}{2}$ ; reichsmarks, 95.  $\frac{1}{2}$ @95 $\frac{1}{2}$ , and 95 $\frac{1}{2}$ @96; guilders, 40 $\frac{1}{2}$  and 40 $\frac{1}{2}$ .

The closing posted rates were:

|                          | 60 days.           | 90 days.           |
|--------------------------|--------------------|--------------------|
| London.....              | 4 88               | 4 90               |
| Paris francs.....        | 5 15 $\frac{1}{2}$ | 5 13 $\frac{1}{2}$ |
| Geneva.....              | 5 15               | 5 12 $\frac{1}{2}$ |
| Berlin, reichsmarks..... | 95 $\frac{1}{2}$   | 96 $\frac{1}{2}$   |
| Amsterdam, guilders..... | 40 $\frac{1}{2}$   | 40 $\frac{1}{2}$   |

#### BUFFALO MARKETS.

FLOUR—City ground clear Duluth spring \$5.25@5.75; straight Duluth spring, \$5.75@6.00; amber, \$5.75@5.85; white winter, \$5.75@6.00; new process, \$6.75@7.00; Graham flour, \$5.25@5.50. Western straight Minnesota bakers, \$5.75@6.00; clear do, \$5.25@5.75; white winter, \$6.00@6.25; new process, \$6.75@7.25; low grade flour, \$2.50@4.00. CORNMEAL—Market steady, with a fair demand. Coarse, \$1.10; fine, \$1.30 per cwt. RYE FLOUR—In fair demand at \$3.75@4.25. OATMEAL—Ingersoll, \$5.75; Bannerman's granulated, \$6.00; Schumacher's Akron, \$8.25 per bbl. BUCKWHEAT FLOUR—Demand fair at 3.50 per cwt. WHEAT—Quiet and weak. Sale 500 bu. No. 1 regular at \$1.08, 500 bu. No. 1 red at \$1.10, and three car-loads No. 2 do at \$1.07. No. 1 white winter offered at \$1.12 $\frac{1}{2}$ . At the Call Board No. 1 hard No. 1 there Pacific was offered at \$1.13, \$1.12 asked, \$1.10 bid to arrive May and June; \$1.11 asked July. CORN—Scarce. Sales six car-loads No. 2 at 61 $\frac{1}{2}$ ¢, three do. do. at 62¢, and three do. No. 3 at 59 $\frac{1}{2}$ ¢@60¢. OATS—Mixed Western 37 $\frac{1}{2}$ ¢@38¢; No. 2 white 41 $\frac{1}{2}$ ¢@41 $\frac{1}{2}$ ¢, sample do. 40 $\frac{1}{2}$ ¢; new State from wagons 44 $\frac{1}{2}$ ¢. BARLEY—No. 1 Canadian 93¢@95¢; No. 2 do 85¢@90¢; No. 4 do 70¢@75¢. Six-rowed State 78¢@79¢. RYE—No. 2 Western nominal at 72¢.

#### OUTLOOK FOR THE WINTER WHEAT CROP.

The reports about the present condition and outlook of the winter crops are on the whole favorable, although some of it is backward, says the Cincinnati Price Current. The returns indicate condition and outlook at about 95, when 100 represents a full average. According to this computation the present crop is about 17 per cent. better than that of last year, indicating 350,000,000 bushels for the winter crops.

Spring wheat sowing has progressed almost everywhere under favorable circumstances, with an increase in Minnesota, Dakota and Iowa. The states with Wisconsin and the New England states last year produced 125,700,000 bushels of wheat, which may be called the spring wheat proportion of the crop. Of course no reliable estimate can be made as to the outcome of this season's crop. With the increase in the aggregate acreage now apparent and ordinarily favorable conditions, the production may be expected to fully equal that of last year, and possibly reach 150,000,000—but it would not be well to count on exceeding 135,000,000 bushels.

## DUFOUR & CO.'S CELEBRATED BOLTING CLOTH.

These calculations indicate 350,000,000 bushels for the winter crop and 135,000,000 for spring growth, or an aggregate of 485,000,000 bushels, compared with 420,000,000 in 1883, 504,185,000 in 1882, 380,280,000 in 1881, 498,549,000 in 1880, and 459,483,000 in 1879—the average for four years previous to 1883 being 460,000,000. The present season will probably close with reserves not greatly in excess of two years ago.

In Ohio last year's wheat crop was 59 per cent. of the average of the previous four years. The present estimate is 87 per cent. of an average, about 32 per cent. better than a year ago.

In Indiana, last year's crop was about 66 per cent. of the average for four previous years. Nearly half of present returns indicate a full average condition and prospect, though a little late in many cases. The general condition and outlook for the State, as indicated, is nearly 90 per cent. of a full average, and about 22 per cent. better than a year ago.

The Illinois crop last year was very small, and but 46 per cent. of the average production of the four years preceding. Present conditions are quite variable; about one-fourth of the returns indicate 100, or average condition; the general average for the State seems to be about 75, or 40 per cent. better than a year ago.

In Missouri, last year's production was 91 per cent. of the average for four years, and the present general condition is but little, short of 100.

In Kansas, last year's production was 14 per cent. less than the preceding year; present indications are, with scarcely an exception, unusually promising, better than an average; general condition, 105, equivalent to 30 per cent. better than returns a year ago now, subsequent to which time there was considerable improvement.

In Kentucky, last year's crop was 80 per cent. of the average for four years, and the outlook was materially less than the indications a year ago now. Present condition is almost uniformly good, and but little below an average—about 95.

In Tennessee, last year's crop was about 92 per cent. of an average; present condition and promise is excellent, better than usual—fully 100, or higher, and equivalent to something over 10 per cent. better than a year ago.

In Michigan, the production last year was 82 per cent. of the four years' average; the present condition is generally good, though the growth is backward; average condition, 90—about the same as a year ago.

In West Virginia, wheat is not an important crop; last year's crop was 92 per cent. of the four years' average; present condition generally good, 95 or higher.

The four Middle States, New York, New Jersey, Pennsylvania and Delaware, produced last year 88 per cent. of the average for four previous years; the condition now averages about 100.

The eleven Southern States last year produced 90 per cent. of the production in the preceding year, and about an average of the crops for four years. The condition this season is somewhat above average. The Pacific States and Territories are favorable to a gain over last year.

The foregoing-mentioned States and groups of States and Territories comprise what may be reckoned as the winter wheat territory of the United States. Something of spring growth is raised in some of these localities, balancing which there is something of winter wheat in other States which are credited to the spring crop division.

THE MILLING WORLD has to acknowledge the receipt of a copy of the thirty-fifth annual report of the Cincinnati Chamber of Commerce, which gives a most complete record of every part of the city's commerce during the past year, as well as compared with that of previous years. We are told that, although the general aspect of the business of 1883 has not been favorable, that Cincinnati has been especially exempt from failures during that time, and a larger amount of money has been spent on building than in any similar period. The grain business did not make a favorable showing. The shipments aggregated 4,028,448 bushels, in comparison with 9,354,855 bushels in 1881-82, and 5,856,920 bushels in 1880-81. Though there was a considerable reduction in the receipts of wheat in the commercial year, the receipts of the crop year, commencing in June, showed a marked increase, and made the largest showing in the history of the city, measured by the crop year. The statistics of the other industries are carefully tabulated and indexed, and the whole report reflects great credit upon the activity of the merchants of Cincinnati.

#### THE BOSS ELEVATOR CUP



is gaining favor every day. Over 13,000 sold in one day in three different States. My capacity in my new shops is 8,000 per week. I carry 80,000 cups in stock and can take care of any size order.  
W. F. MYER,  
19 and 21 E. South St.,  
INDIANAPOLIS, IND.



Toledo Mill Picks and Stone Tool Mfg. Co.

Manufacturer and Dresser of

#### MILL PICKS.

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, O. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF  
SHAPING, PULLEYS, HANGERS, COUPLING  
AND MACHINE JOBBING.

## RE-GRINDING AND RE-CORRUGATING ROLLS!

We have recently provided ourselves with special machines for this purpose, and are prepared to execute all orders promptly.

SEND IN YOUR DULL ROLLS.

## THE BRADFORD MILL CO.

CONTRACTORS AND GENERAL MILL FURNISHERS.

Eighth and Evans Sts., - Cincinnati, Ohio.



## PATENT MILLSTONE CEMENT

Invaluable to Millers for Repairing and Filling the Joints, Cavities, and Seams in French Burr and other Millstones.

PRICE PER CASE, \$5.00. SEND FOR CIRCULAR.

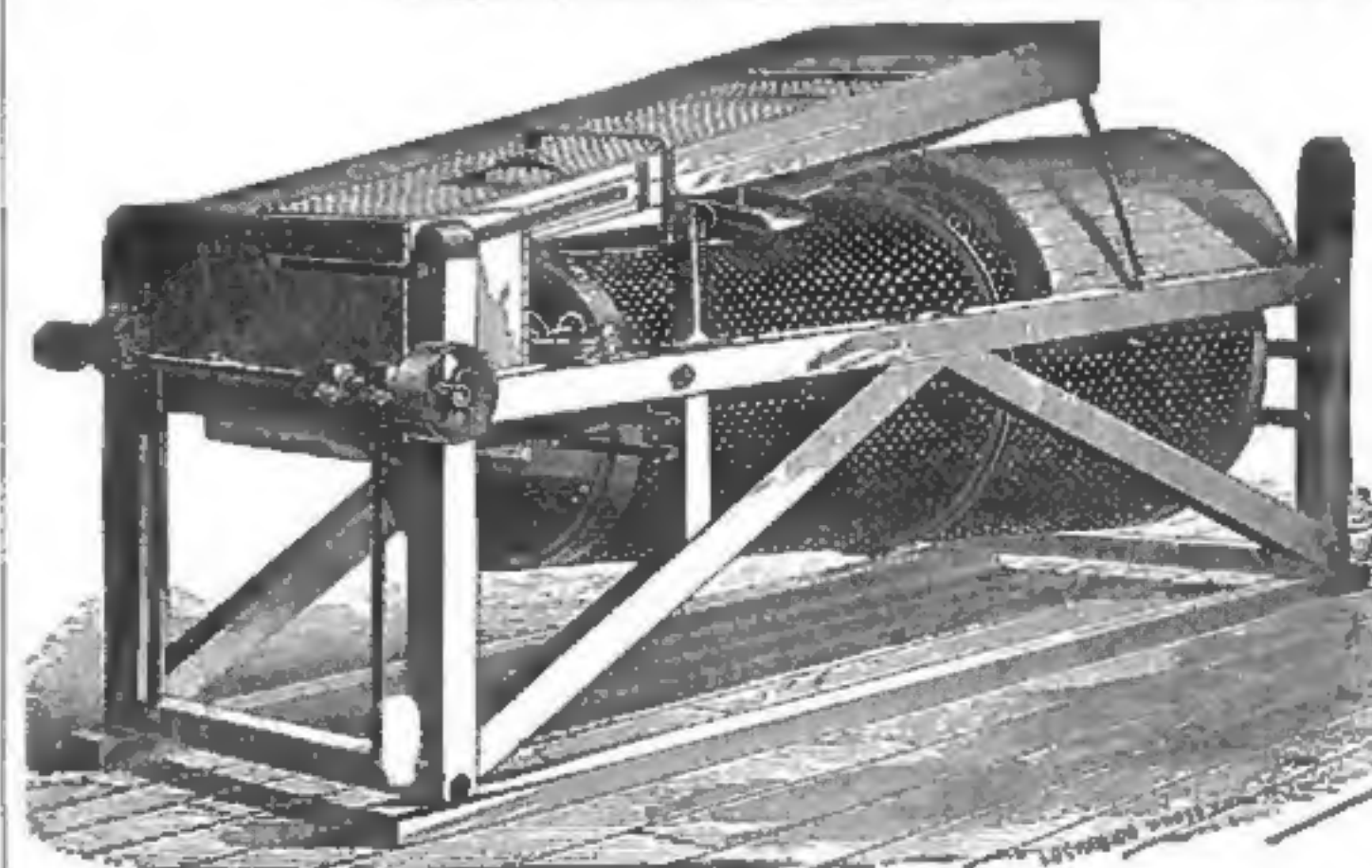
Union Stone Co., 38 & 40 Hawley Street, Boston, Mass.

Union Emery Wheels, Emery Wheel Machinery and Tools a Specialty. Wooden Polishing Wheels, Grinders' and Polishers' Supplies. Catalogue on Application.

EMERY, QUARTZ, CORUNDUM.

## Cockle Separator Mfg. Co., Milwaukee, Wis.

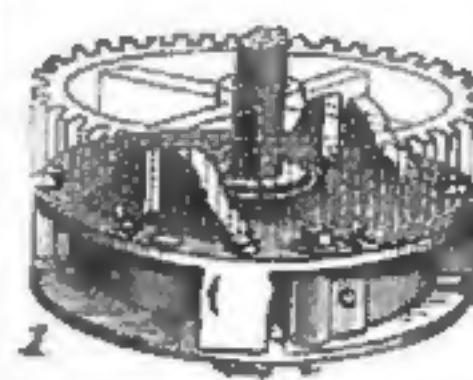
GENERAL MILL FURNISHERS.



MANUFACTURERS OF  
Improved Kurth's Pat.  
**COCKLE SEPARATOR**,  
Built also in combination with  
Richardson's Dustless  
**Wheat Separators**.  
Large Capacity Combined With  
Good Quality of Work.  
**Beardslee's Patent**  
**GRAIN CLEANERS**  
Fully Guaranteed to Give the Best  
of Satisfaction.  
Pott's Pat. **Automatic Feeder**  
for Roller Mills, Purifiers, etc.,  
very Simple and Cheap.  
**Perforated Sheet Metals**  
AT LOW PRICES.

Send for Circulars and Catalogues.

FIRST AND ONLY PREMIUM  
OVER ALL COMPETITORS!  
PURCHASE ONLY  
FROM RELIABLE DEALERS.

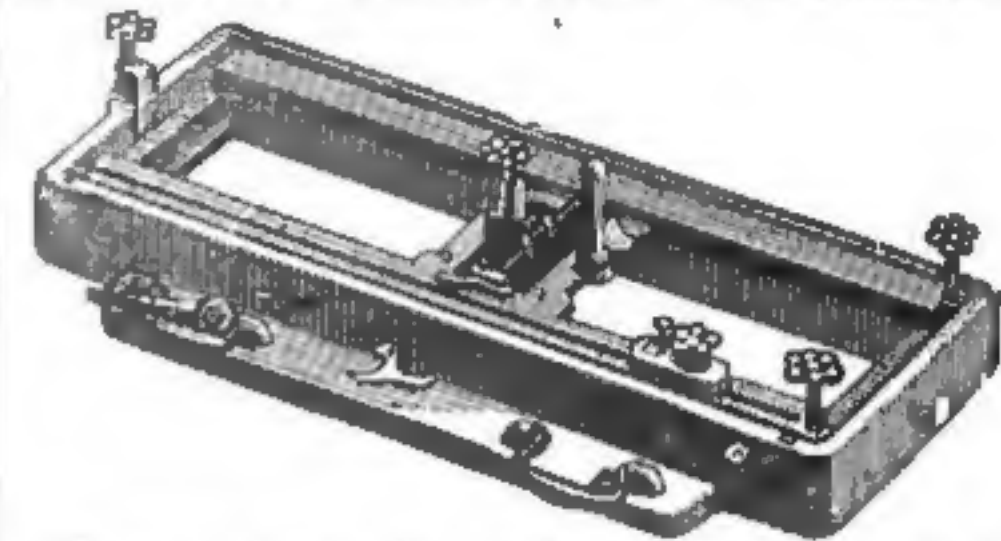


#### EUREKA COIL SPRING

Warranted to Prevent Backlash. Over 1,000 in use. Equilibrium Driving Pulley Prevents Side Pull on Mill Spindle.  
JOHN A. HAFNER,  
PITTSBURGH, PENN.

TEETON'S QUICK ADJUSTABLE

#### Diamond Millstone Dressers.



No screw feed. A new invention. Automatic rod feed. The only perfect, practical feed ever invented for a millstone dresser. A revolution. No ratchet wheel, springs, pulleys and levers to contend with. Can cut over 1,000 cuts per inch right or left, reversed with the tip of one finger, while in motion. Feed can instantly be regulated to cut fine or coarse with one hand while the carriage is operated with the other, by the use of this rod feed can push the cross head right or left for quick operation. Self reversing when pushed to either side of carriage. A machine of special merits, is specially adapted for deep facing, as the feed can instantly be regulated to protect the diamond point, therefore need not raise the diamond on account of a slight raise. No extra attachment required to furrow. No change to be made on the cross head. All regulations or adjustments are made without the use of a tool to crack, face or furrow right or left hand burrs. Is warranted as represented, and is specially guaranteed to be more easily operated and quickly adjusted than any of its class, is convenient to set over spindles as machines are ample wide. Also a new improved patent diamond holder, the only perfect one. Other good improvements not mentioned. Sold on trial to responsible parties. Prices reasonable. Send for circular giving full description.  
C. A. BERTSCH,  
Sole Manufacturer, Cambridge City, Ind.



# NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Builders from the Raw Material of

## ROLLER MILLS, CENTRIFUGAL REELS, FLOUR BOLTS.

WE ARE THE SOLE OWNERS FOR THE UNITED STATES, OF ALL THE PATENTS UPON THIS ROLLER MILL.

*This Is the Only Roller Mill Made Having All the Essentials Needed In Successful Milling.*

300 BARREL MILL IN MISSOURI.

Read what an Old Miller who has Thirty-Four Pairs of these Rolls in Constant Use, Says:

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

*Gentlemen:* In regard to the workings of our new mill erected by you, will say it is working fully up to and beyond our expectations. Our average work is fully 35 per cent. over your guarantee. Since starting our mill last July we have had no complaint of our flour from any market where sold. It gives universal satisfaction, and we have it scattered on the trade from Chicago to Galveston, Texas. Our yields are all that are attainable. We have tested it on both Spring and Winter wheats with satisfactory results on both varieties. Since the mill was turned over to us we have not changed a spout or a foot of cloth, nor have we found it required to make any changes. We have run as long as six days and nights without shutting steam off the engine, not having a "choke" or a belt to come off. The mill is entirely satisfactory to us, and for a fine job of workmanship, milling skill and perfection of system, we doubt if it is surpassed in the United States to-day. It is certainly a grand monument to the ability and skill of Col. C. A. Winn, your Milling Engineer and Designer. You may point to this mill with pride and say to competitors, "You may try to equal, but you will never beat it." Wishing you the success that honorable dealing deserves, I am,

OFFICE OF DAVIS & FAUCETT MILLING CO.,  
ST. JOSEPH, MO., Nov. 28th, 1883.

Yours, etc.,  
R. H. FAUCETT, PRES.

300 BARREL MILL IN ILLINOIS.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

*Gentlemen:* We started up our mill in June last year, and it gives us pleasure to say that your Roller Mills are doing splendid work and give us no trouble. Your milling program required no changes, and concerning yields, we get all the flour from the offals, and we sell our best grades in the principal markets of the United States at the highest prices offered for any flour. All the machinery made by you is first-class, and we would not know where to purchase as good.

OFFICE OF DAVID SUPPGER & CO.,  
HIGHLAND, ILL., Jan. 10, 1884.

Yours respectfully,  
DAVID SUPPGER & CO.

125 BARREL MILL IN INDIANA.

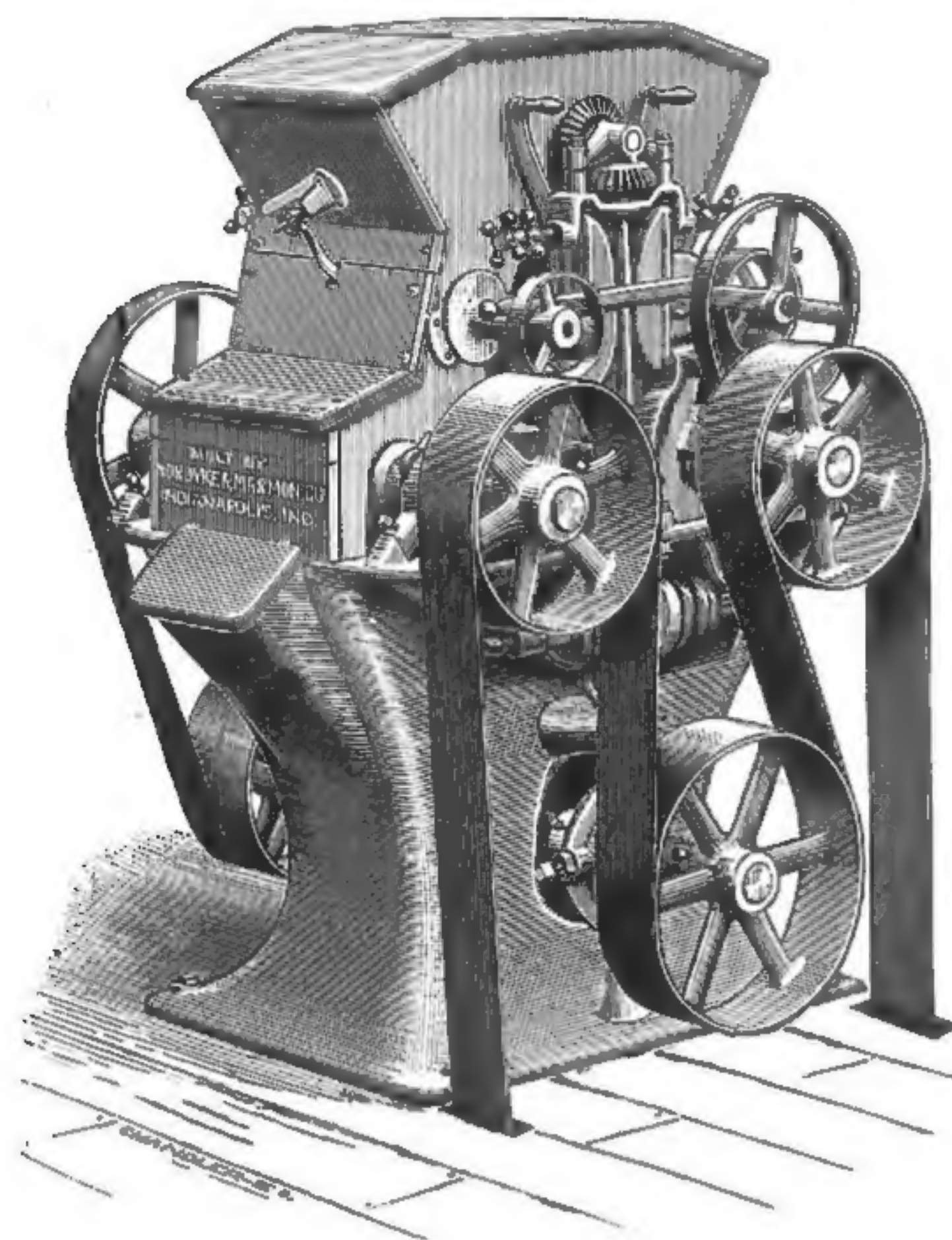
NORDYKE & MARMON CO., INDIANAPOLIS, IND.

*Gentlemen:* The 125 barrel All Roller mill you built us has been running all summer, and does its work perfectly. Before contracting with you for this machinery we visited many Roller Mills throughout the West and Northwest, built by the different leading mill-furnishers, and from all we could see, those built by you seemed to be giving the best satisfaction, and this is why we bought our machinery of you. Our mill comes fully up to your guarantees, and the capacity runs over your guarantees. The bran and offal is practically free from flour, and our patent and bakers' flour compares favorably with any we have seen elsewhere. I don't think anyone can beat us. Your Roller Machines are the best we have seen; they run cool, and the interior does not sweat, and cause doughing of the flour. Judging from our success, we would recommend other millers to place their orders with you.

LAPEL, MADISON COUNTY, IND., Jan. 10, 1884.

Yours truly,  
J. T. FORD.

Letters on file in our office from a large number of small roller millers giving as favorable reports as above. A portion will be published as occasion demands.



### SPECIAL MILLING DEPARTMENT!

## Mill Builders & Contractors--Guarantee Results

Motive Power and Entire Equipment of a Modern Mill Furnished under one Contract.



MILL SUPPLIES { Everything Used in a Mill of Every Kind Always on Hand.

Leather Cotton Rubber } BELTING, BOLTING CLOTH  
ELEVATOR BUCKETS, BOLTS, MILL IRONS, &C.

Prices Close and Quality the Best.

The Case Mfg. Co., Columbus, Ohio.

## A 6x12 ROLL.

We are making the neatest and most substantial 6x12 Two and Four Roller Mills, smooth and corrugated, ever put on the market. Millers wanting small rolls (as well as large), will find ours well made, neat and complete. Every pair has our Patent Automatic Feed. The price is low down.

ADDRESS,

Case Mfg. Co., Columbus, Ohio.

## THE BEST AND CHEAPEST COB CRUSHER

IN THE WORLD.

Steel Being Used in its Construction.

PRICE, 30.00.

RIGHT-HAND MILL.

CAPACITY 75 BUSH. PER HOUR.

Thousands of these Crushers are now in use, and giving entire satisfaction.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.



## THE "SALEM" ELEVATOR BUCKET.

SHOVEL EDGE

Seamless Rounded Corners

CURVED HEEL.



RUNS EASY

STRONG & DURABLE

EMPTIES CLEAN.

W. J. CLARK & CO., MANUFACTURERS, SALEM, OHIO.

New York Office and Salesroom, No. 9 Cliff Street.

## CORN & COB CRUSHERS

PRICE, \$15.00.

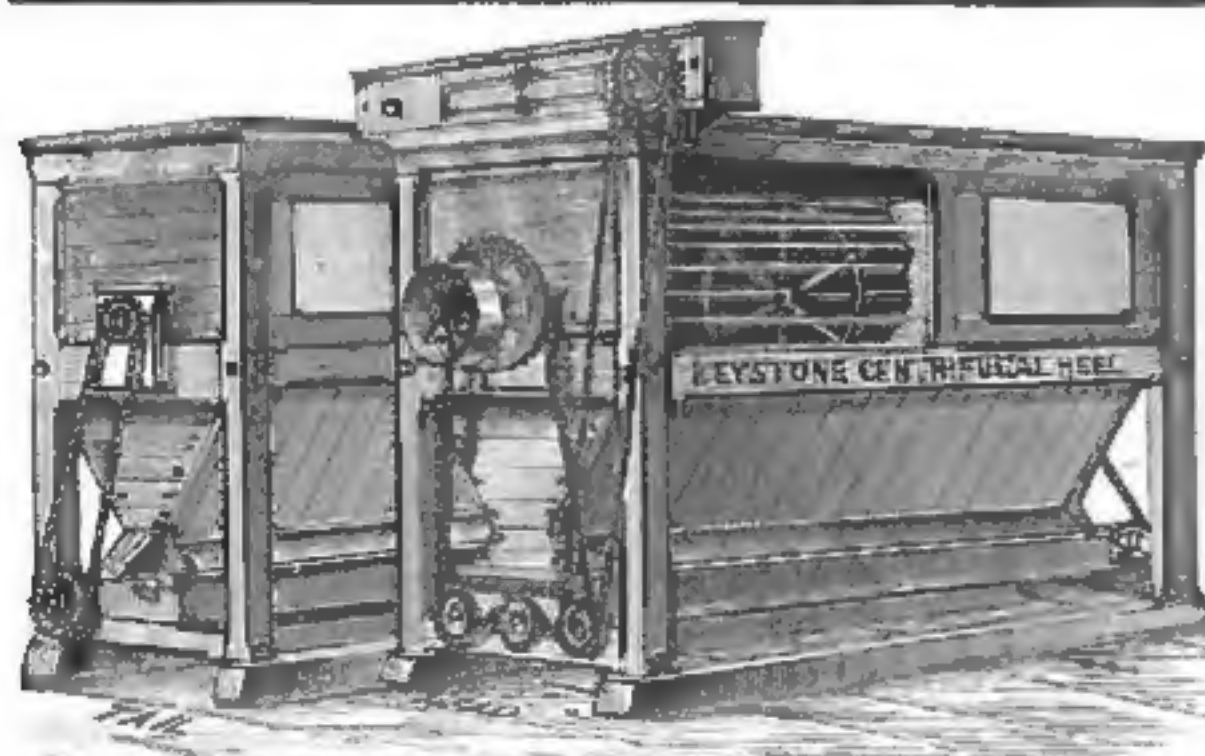
Send For Circular.

SHAFTING, PULLEYS & HANGERS.

Pulleys a Specialty, Large or Small. Address,



T. B. WOOD & SONS, CHAMBERSBURG, PA.



## KEYSTONE CENTRIFUGAL REEL

Drag Brush Feed, Tightest Heads, Best Results. Cheapest and Best on the Market. Adapted to all Kinds of Milling.

Mr. C. K. BULLOCK, PHILADELPHIA, PENN.

Dear Sir: The No. 3 "Keystone Centrifugal Reel" I bought of you works satisfactorily. I think it is one of the best machines I ever put into my mill and would not do without it if it cost double the amount of your price list.

Yours truly,

YERKES, PA., Nov. 22d, 1883.

JACOB H. LANDIS.

The New Drag Feed Thoroughly Protects the Gills. Sent on Trial to any Responsible Miller. For Circulars, Prices, and Full Particulars, Address the Manufacturer,

C. K. BULLOCK, 1357, 1359, 1361 RIDGE AVE., PHILADELPHIA, PENN.



# The Rounds Sectional Roller Mill

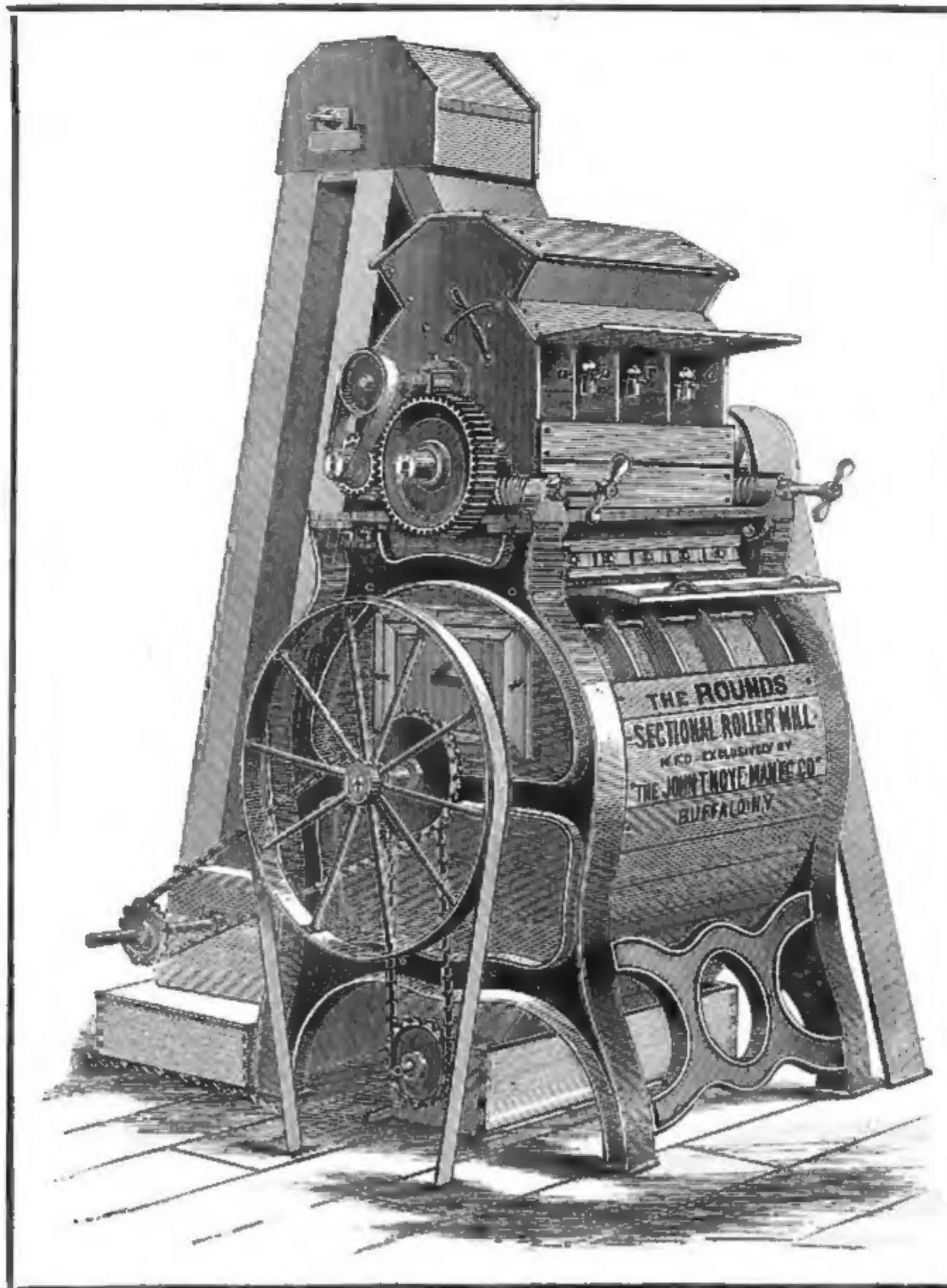
*Is Especially Adapted for  
Custom and Exchange  
Millers.*

Can be Adopted with less outlay  
of money, and will produce more  
satisfactory results than any other  
roller mill manufactured.

STEVENS  
CORRUGATIONS.

This mill is in successful  
operation in hundreds of  
mills, and not one has  
failed to come up to  
the capacity and  
work guaranteed.

CORRESPONDENCE SOLICITED.



*Unquestionably the Roller  
Mill for Merchant  
Millers.*

Perfect in its operation, and it  
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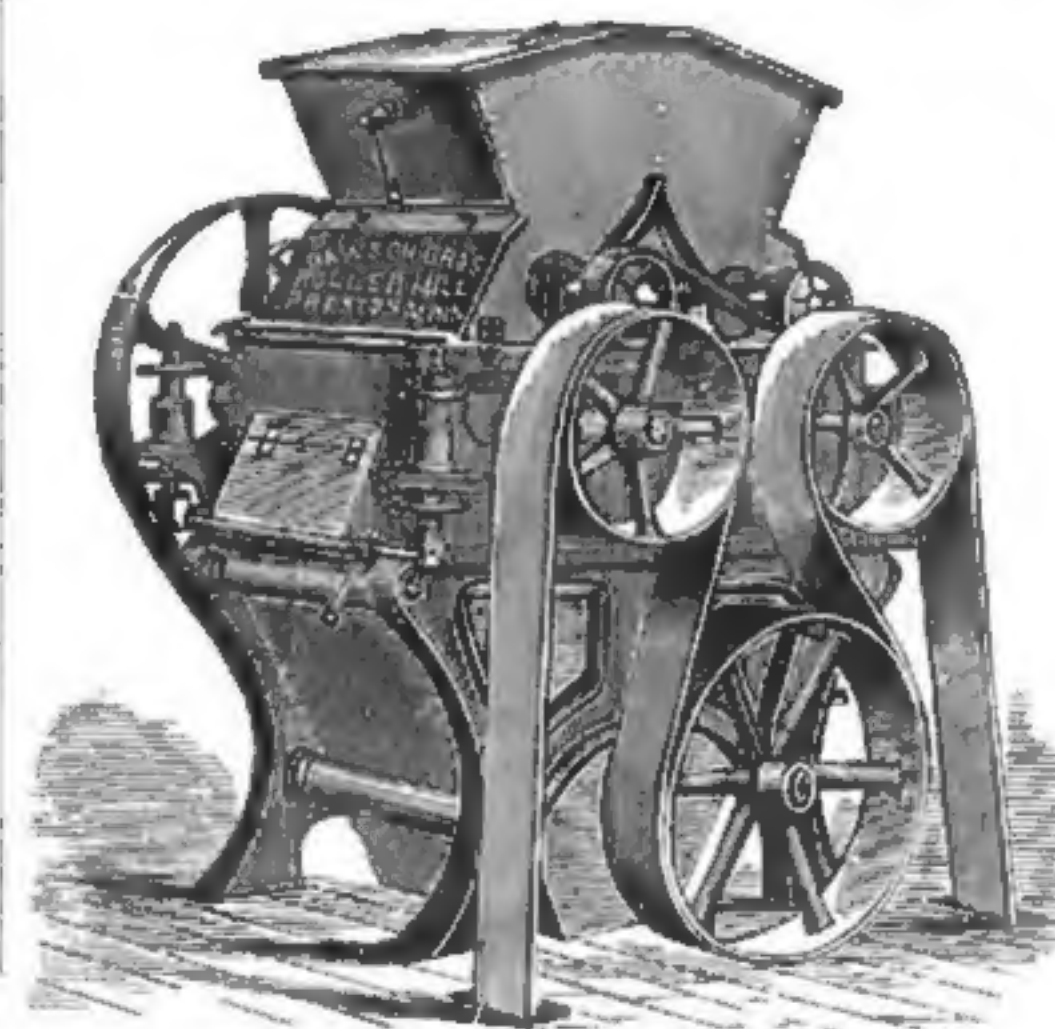
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